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TEXTILE WORLD

(Formerly *Textile World Journal*) with which are combined *Textiles, Possell's Textile Journal* and *Textile Advance News*. Published monthly. United States and Possessions, and Canada, $3 per year; all other countries, $5, U. S. currency or 20 shillings. Single copy, 35 cents, excepting special issues.

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Textile World

January, 1937

Editor: DOUGLAS G. WOOLF

A New Era in Textiles... IF

THERE was a textile boom in the last half of 1936—and the industry enters 1937 under boom conditions.

It's pleasant to put those words down just like that—bluntly, and without the "ifs" "ands" and "buts" we've had to employ for lo these many years. It's safe too—because no one can dispute that statement.

Here is the record: Textile mill activity in 1936 not only up to, *but 7% ahead of,* 1929; approximately 16% above 1935; and 22% above a "normal" year—taking the 1923-25 average as "normal." And this in 1936 which was supposed to be an off-year in the two-year textile cycle!

With this activity has come profitable operation. Most branches of the industry, and most companies, have made money. Not the least important result of this has been the expenditure of some of this money on long-needed programs of plant modernization. We haven't yet compiled our annual index of sales of textile machinery and accessories, but we have a hunch it will be at least at the 1929 level.

WHAT have been the causes of this textile boom? The primary one has been the remarkable pick-up in the capital goods industries. As we have pointed out before, most of the recent recovery spurts have been sustained by the consumer goods groups alone—and you can't get very far that way. This time the program is different—and there is every indication of a continuation and an acceleration of the pace of the heavy industries in 1937.

Another contributing factor has been the speculative anticipation of higher costs, and consequently higher prices. A scarcity was the natural result, and this in turn intensified the boom conditions. It is impossible to gauge the extent of that speculative interest, but it is safe to say that there is still every prospect of continued activity and firmness during the next several months.

WE should like to stop here. But Christmas is over, and so is New Year's, and we must forget about Santa Claus, and go back to our role of self-constituted warner. This time we warn against:

1. **Too rapid price advances.** There is a tendency in this direction in certain branches: notably in wool goods and in staple cotton fabrics. (As evidence, see the manufacturing margins on print cloths on page 125.)

2. **Excessive production schedules.** The November consumption of cotton, for example, was something to worry about—not for the immediate future, but because the industry mustn't get the idea that it can produce at that rate indefinitely and get away with it. It can't.

3. **Too great plant expansion.** There's enough replacement and modernization to be done right now to take care of the equipment and allied products manufacturers for a long time ahead. In most branches, large-scale expansion would be dangerous.

The net of this advice is: Enjoy the boom but don't get a boom complex. We're bullish on the textile industry right now—more so than we've been in years. In fact, we really believe that the long-heralded "new era" in textiles is here . . . and that it will stay IF the manufacturers treat it right.

The Editor Says

What'll You Have?

THIS much has happened recently on the subject of possible industrial legislation: First, the Berry conference proved to be as futile as we had predicted. True, statements were given out regarding the joint desire of industry and labor for certain types of Government regulation, but since the great bulk of industry was not represented at the conference, we can skip that.

Second, there is every expectation that the Ellenbogen Textile Control Bill will be pushed hard during the present session of Congress—and that it will have the active endorsement of John Lewis's C. I. O.

Third—and infinitely the most important—a new line of action is having serious consideration in Washington. Briefly, this entails—without constitutional amendment—new legislation which would enable an industry to establish hour and wage standards and then to secure Government aid in the enforcement of those standards. Violation of them would be in itself unfair competition and consequently a violation of the anti-trust laws just as are monopolistic practices today. This is in line with the contention which many students of industrial legislation have held for years: namely, that wage chiseling is just as much a form of unfair competition as is a tendency toward restraint of trade through monopoly. Also, it is in line with the type of action which we advocated for the textile industry in these columns last month.

The choice is up to the industry. If it wants the Ellenbogen Bill, all it has to do is to sit idly by and let the U. T. W. and the C. I. O. decide its future for it. If it wants an opportunity for self-government, it should get out in front and fight for it, just as we advised last month. If it doesn't want anything at all, it should wake up and notice what is going on around it. The time has passed for that alternative.

There are just two avenues open for industry: Government control, or self-government under Federal supervision. In the words of the prophet, "you pays your money and you takes your choice."

A Turn for the Better

THE strong turn in the hosiery market around the first of the year is a welcome, though belated, response to the better feeling which for some months has featured other branches of the textile industry. The lack of progress in the hosiery field last year can be cited, however, as a horrible example: a case-study of that peculiar trait which impels textile manufacturers at various times to make and sell goods without a profit, and even at a loss.

From statistics available at this writing, it appears that hosiery sales last year set a record, exceeding even 1929. And yet, the price level on the whole was thoroughly unsatisfactory with the result that the industry did not reap the reward to which spirited demand for its products would seem to entitle it.

What was the trouble? At least a partial answer is found in the following statement by the Southern Hosiery Manufacturers' Association:

"When reports are read concerning our largest buyers detailing their enormous earnings, bonuses, wage increases, and extra dividends, it would appear that there is something wrong with our economy that makes it possible for them to obtain such wide margins on the resale of our products when our mills are operating at a loss, at cost, or at a very small margin of profit at best. The chains seriously object to changing their price brackets but, after all, that is their problem and it is up to the mills to decide whether or not they will continue to sell their products practically at cost in order that the chains may continue to maintain their present price ranges. The theory that the large buyers are in a position to fix the price is not at all sound because the mills have the right and should dictate the prices for which they will sell."

The paradoxical nature of the situation in hosiery can best be illustrated by reference to gift buying during the recent holidays. As a manufacturer expressed it in a letter to the National Association of Hosiery Manufacturers, "here we have probably the best buying season in a number of years"—and yet "in many cases the big stores are running specials at a time when better merchandise at regular prices can be sold."

In this situation the National Association has been carrying on a definite campaign to inject price sanity into the industry. There have been some results—and some more are indicated as we write this. The series of conferences conducted by the managing director in various sections has been a helpful influence. The efforts of the Southern Association have been an important support. In four weeks low-end lines have gone from $5.60 to $6.35, a gain of 13%.

Most of the other branches of the textile industry are making money now—and in fact are hailing the return of a profitable era. We trust the hosiery industry's new trend toward profitable prices will be more than momentary.

The Editors Report

THE editors of TEXTILE WORLD decided to turn over a new leaf, beginning with the New Year. It's an old story to them because they have been doing it every year, and at odd times during the year: trying to make steady improvement in the character of the paper and its service to readers. But even though it is an old story, it's always thrilling.

This time it takes the form of new and improved typography, headings and general make-up throughout the book; radical increase in space devoted to the important New Machinery and Processes section (see page 117) which was voted the most popular feature in our recent poll of readers; and creation of a separate Mill News Department (see page 133).

These climax a series of forward-looking moves made during the last year, among which were the establishment of the special section, the Overseers' Corner, in each issue; expansion of the space devoted to practical mill articles; and increase in news about men, which in turn included the starting of the Textile Personalities page which appears from time to time.

We are busy on further advances for 1937.

1937 Forecast . . .

What McGraw-Hill editors think of future in major industries

THE textile industry promises to go places in 1937. What about the other industries, whose activity is essential if textiles are to continue to be bought? For our answer we turned to the editors of McGraw-Hill publications, representing the major branches of business. Here they are:

GENERAL BUSINESS

▶ A New business tempo seems certain to develop in 1937. There is little room left for doubt that the upward surge of volume and activity will continue. The new year will probably mark the turn from a buyers' to a sellers' market. — GLENN GRISWOLD, editor, *Business Week.*

FOOD INDUSTRIES

▶ Prospects for 1937 in the food manufacturing industries look very satisfactory from the profit standpoint. Rising prices characterized 1936 and, with these price increases, profit margins have become more satisfactory, though never yielding profits of the size found in other types of industry. Net earnings for national advertisers are expected to increase over 6% over 1936 earnings. For smaller companies the increase will be somewhat less.—L. V. BURTON, editor, *Food Industries.*

METAL MINING

▶ The metal mining industry in the United States achieved a substantial degree of recovery in 1936. The prospect for 1937 is for further improvement. Most important is the increased production and consumption of the major nonferrous metals—copper, lead, and zinc—which experienced during the year a reasonable degree of the prosperity hitherto enjoyed only by gold and silver.—H. C. PARMELEE, editor, *Engineering and Mining Journal.*

COAL-MINING

▶ Mirroring the steady improvement in general industrial conditions, bituminous coal production in 1936 showed an increase of 15% over the 1935 output. Although the expiration of the present wage agreement next spring and the earlier probability of proposals for federal legislation to replace the outlawed Guffey act are spots on the 1937 horizon, the general outlook for the new year is distinctly favorable.—SYDNEY A. HALE, editor, *Coal Age.*

> ***"There can be no question that there has developed an irresistible upward surge of business which will continue through 1937. During these last years, when obsolescence outraced replacement and modernization, the basis for a recovery of almost boom proportions was laid throughout the capital goods fields, including construction. This past year has seen a rate of increase in these heavy industries approximating five times that in the fields of consumer goods and services."***
>
> **MALCOLM MUIR, president, McGraw-Hill Publishing Co.**

CHEMICAL INDUSTRY

▶ The chemical industry is expanding rapidly. Witness the rapid growth of rayon, for example, expanding from 100 in 1929 to 227 for 1936 or wood pulp rising to 180 during the same period. Glass containers at 146, plate glass at 130, rubber at 117, have all left far behind the 1929 = 100 base line. Production schedules for 1937 call for further increases—averaging at least 10% above the 1936 level.—SIDNEY D. KIRKPATRICK, editor, *Chemical & Metallurgical Engineering.*

CONSTRUCTION

▶ Closing the year 1936 with vigorous acceleration of pace, engineering and building construction looks forward to steady increase on a sound basis during 1937. Present conditions warrant the guess that it may reach nearly three-fourths of normal volume, a 100% gain from the 1932-33 low.—F. E. SCHMITT, editor, *Engineering News-Record.*

MACHINERY AND METAL WORKING

▶ All things considered the metal-working industry looks forward to 1937 as likely to be the best year since 1929, with the possibility that 1929 records may even be surpassed.—KENNETH H. CONDIT, editor, *American Machinist.*

ELECTRICAL WHOLESALERS

▶ There is every indication that the consistent improvement which electrical wholesalers have experienced during 1936 will not only continue, but will be accelerated during 1937.—E. T. ROWLAND, editor, *Electrical Wholesaling.*

MOTOR BUS INDUSTRY

▶ All general business indicators point to improved business conditions, and this trend certainly is true of bus revenues, which are better than any single year since 1932.—CARL W. STOCKS, editor, *Bus Transportation.*

TRANSIT

▶ Bigger gains were made by the transit industry in 1936 than in any other year since the beginning of the recovery movement. All forms of transit shared in the improvement. More than 5,000 new transit vehicles were ordered during 1936, setting a 23-year record. Prospects are bright for continued activity in equipment buying.—JOHN A. MILLER, editor, *Transit Journal.*

Washington Forecast

Outlook for legislation

affecting the textile industry

From TEXTILE WORLD'S
Washington Office

IT is tremendously difficult at the moment to make any very accurate forecasts on certain legislative questions of enormous importance to the textile industry. Some of the most vital depend on the Supreme Court. Some will be determined by the President, after listening to a host of disagreeing advisers.

Some exceptions to this are apparent. For instance it may be stated with the utmost positiveness that there will be no substantial modification of either the tax or social security legislation. There will be minor amendments to both acts.

Some underbrush can be cleared away as to these. For instance, it is probable that there will be an amendment enacted to the tax law which will help corporations deeply in debt. Another may liberalize present allowances for replacing obsolete machinery, plant or whatnot. There will NOT be any modification of the underlying principle of taxing undistributed earnings. There will NOT be any liberalization of the rulings governing new or additional plant or productive capacity.

Social Security Legislation

As to the Social Security act, opposition to the general idea of old-age pensions and unemployment insurance is not in sufficient strength to be important. Everyone concerned admits the necessity of amendments. What these will be is still undecided.

Most labor leaders, including William Green, president of the American Federation of Labor, want to stop the payroll deductions which started Jan. 1. Their idea to date is to shift this burden entirely to the employers. At the moment this would seem to be the probability. A small group of labor leaders would like to go much further. They would like to eliminate the payroll taxes altogether, both from employer and employee. They believe that even if the employer pays all of the payroll taxes he would merely add this tax to the cost of his product, and hence a very large part of it would be paid by the workers affected.

Some of them also believe there is no sound reason for piling up these taxes in the Federal Treasury until a 47 billion dollar reserve fund has been accumulated. In effect, they point out, this would force the workers of the country, with comparatively trifling assistance from the rich, to pay off the Federal debt. And then some.

There is another advantage to paying the old-age pensions and unemployment insurance out of the general funds of the Treasury which also appeals to a few critics of the law, though not so much to labor leaders. It would eliminate the tremendous job of record filing and keeping, which will require, it is estimated, something in excess of 300,000 Federal clerks.

An advantage which does appeal to labor leaders is that this additional burden on cost of production, instead of on the general tax fund, would handicap all manufacturers in export.

But most of the men close to the President seem to think that the idea of each worker knowing that HE was contributing something to his own social security, that a percentage of HIS OWN earnings was being laid aside for this purpose, and had an effect on what he would draw in time of need, is held vitally important.

Prospects for Ellenbogen bill, (introduced Jan. 5) to set up a little NRA for the textile industry as the Guffey law proposed to set up one for the coal business, are muddied not by the elements for and against this specific measure, but by its general relation to the whole picture of providing a substitute for NRA.

The bill will be pushed, but that part is academic. The important thing is what will be decided as to the best avenue for arriving at control of wages and hours, with a particular view to maintaining minimum wages and maximum hours, and preventing child labor.

NRA Substitute Legislation

Here are the three plans now under consideration:

1. O'Mahoney bill: This measure, proposed by Senator Joseph C. O'Mahoney of Wyoming, aims at accomplishing all of the NRA ideals, including child labor as well as minimum wages and maximum hours, by the simple expedient of forcing every corporation doing inter-State business, even if that be only shipping a product across a State line, to take a Federal charter. The idea amounts to licensing, for it would permit no corporation to receive a charter which did not agree to all the stipulations with respect to labor conditions.

2. What might be called the **Guffey-Ellenbogen plan:** This is to have Congress enact a code for each industry, thus applying NRA piecemeal. This plan eliminates the hazard of "delegating power," so important to the Supreme Court in the "hot oil" and other cases. There would be no such delegation of power, for example, as when Congress permitted Gen. Hugh Johnson to approve codes, or the Presi-

dent to impose codes. In the Guffey-Ellenbogen plan Congress itself would write the codes.

3. The Donald Richberg plan: This would attack the same problem under what might be termed the Federal Trade Commission-Clayton act route. It is based on the idea that the Supreme Court has upheld the Federal Government's power to prevent unfair competition in all sorts of cases. Oviously, Mr. Richberg points out, if one employer pays a lower rate of wages than his competitor, or works his labor longer hours, or employs child labor, he is taking an unfair advantage of that competitor. Hence if Congress should enact a law permitting the various industries to draft their own codes, and put the adjudication of disputes under say the Federal Trade Commission, we would have NRA in effect without the dangers and perils of the sick chicken case.

Each of these three plans has its eager advocates. The final outcome may be any one of them, or a modificaof it, or a combination of two or even all three.

World Textile Conference

On April 4 there will convene in Washington a textile conference, in which representatives of 14 nations will seek to make agreements to eliminate unfair competition in the manufacture of textiles as between nations. Japan, the worst offender in underpaying and overworking its textile labor, certainly if China is excepted, will probably determine whether the conference is really to accomplish anything. It has been the tremendous expansion of Japanese textile exports which has caused a great deal of concern in some of the other textile manufacturing nations, notably Great Britain and the United States. Japan's advantage has not only been cheap labor, including both low pay and long hours, but depreciated currency.

Surprising as it may seem to observers, who wonder why Japan should surrender such a potent advantage when it is realized that it is pressure for obtaining international exchange for possible war purposes which has spurred her on, there is considerable optimism among officials here as to the outcome. Just what they rely on to motivate Japan in making concessions is not so clear.

AAA Cotton Taxes

It is virtually certain that there will be no processing taxes on cotton. The AAA is very well pleased with its present setup—has no desire to run head-on into more trouble with the Supreme Court.

Actually, under the soil conservation plan it believes it will be able to accomplish virtually everything contemplated in the old plan, when farmers were paid not to grow a definite amount of cotton, corn, wheat, etc. Now the farmers will be paid not to grow soil-depleting crops, and, with corn having been ruled to be a denuding crop, there would seem to be no bar to any other being included.

Moreover in the present plan there is no easy avenue for anyone opposing the doctrine of scarcity to go into court to test the constitutionality of the law. The litigant must be able to show damage. The high court has already held that damages to a person as a mere taxpayer are not sufficient. It was the processing tax which got the old AAA act before that court. Why take a chance again? Especially as it is perfectly obvious that certain language of the majority opinion outlawing the AAA would apply with equal force against soil conservation.

30-Hour Week Legislation

President Roosevelt has not changed his mind about the 30-hour bill, or any modification of it, so that chances of anything of the sort are practically nil. Incidentally all the hubbub about organized labor being so strong for this measure can be taken with a grain of salt. Union labor leaders always like to have something to trade with, and this has been one of their pets for some years now. They are much more interested in a lot of other things.

Best opinion is that the Supreme Court will uphold the Robinson-Patman law. This judgment is based largely on the court's unanimous decisions upholding the validity of the Illinois and California fair-trade statutes. In these decisions the court admitted that the question of whether price cutting of branded goods is injurious to the consumers is debatable, but decided that the judgment of the legislatures which had passed the laws was final. The same reasoning would approve Congress' decision on this question of policy as final.

If the law fails in its court test it will be because of other reasons—poor drafting for instance—vagueness and indefiniteness. Who knows exactly what "due allowance" or "proportionately equal" means?

Of course also there is the question of whether the court, in its fair-trade decision, had in mind any inter-State angle: for example, whether a resale price contract within one State operates to make shipment of the goods in inter-State commerce legal. The bill of Senator Tydings, of Maryland, which passed the Senate unanimously last session but failed to reach a vote in the House, was aimed at covering this situation.

Present probability is that the Tydings measure will be enacted this session, assuming no new developments to eliminate the need for which it was planned.

"THIS WILL" and "THIS WON'T"

HERE are a few brave statements from the accompanying forecast:

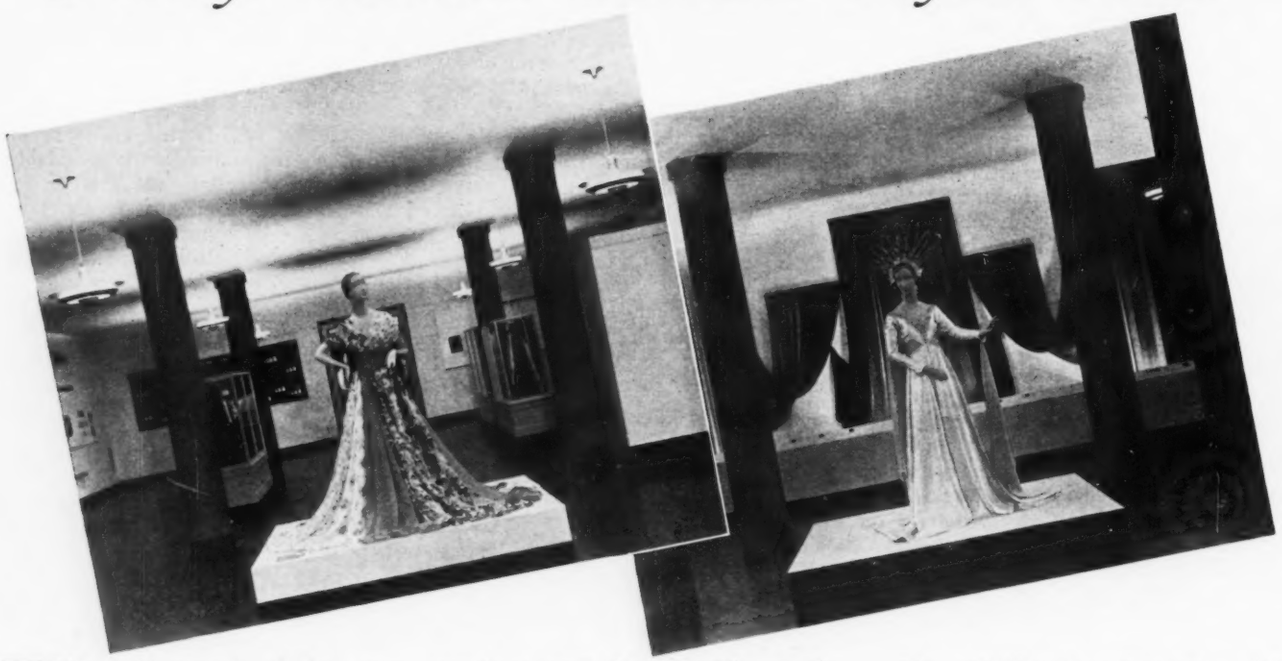
- ***There will be minor amendments to, but no substantial modification of, either tax or social security legislation.***
- ***NRA substitute legislation will probably follow one of three plans, or be a combination of them: Mahoney plan — Guffey-Ellenbogen plan — Donald Richberg plan.***
- ***There will be no processing taxes on cotton; the AAA is content with the present soil conservation plan.***
- ***Chances of a 30-hour week law are practically nil.***
- ***Best opinion is that the Supreme Court will uphold the Robinson-Patman Act.***

All the above is offered without guarantee. We shall keep count on our Washington office's accuracy of prediction.

Rayon Pageant at Beaux Arts Ball

"RAYON ONLY" was the rule among the noted artists who designed costumes for this pageant, Fete de Rayon Fantastique, held in New York last month. Six rayon producers supplied the fabrics for the event which brought prestige and glamor to rayon.

Brooklyn Museum Celebrates Rayon's Gains



THE rapid growth of the rayon industry, technically and commercially, is vividly portrayed in an exhibition of Rayon and Synthetic Yarn Industries, now being held at the Brooklyn (N. Y.) Museum. The following yarn producing companies participated in the event, which opened Dec. 11 and continues until Jan. 25: Viscose Co., Rayon Division, E. I. du Pont de Nemours & Co., American Bemberg Corp., American Enka Corp., Industrial Rayon Corp., Delaware Rayon Corp., Tennessee Eastman Corp., Skenandoa Rayon Corp., North American Rayon Corp., and Tubize Chatillon Corp.

The exhibition has four main divisions: (1) gallery of producing companies; (2) a 4-section history of rayon; (3) knit fabrics; and (4) woven fabrics.

Above illustrations, left to right, show, first, main gallery, with mannikin draped in rayon; second, display of fabrics with mannikin wearing rayon dress.

A New Name...

Here's your chance to vote on new designation for staple fiber

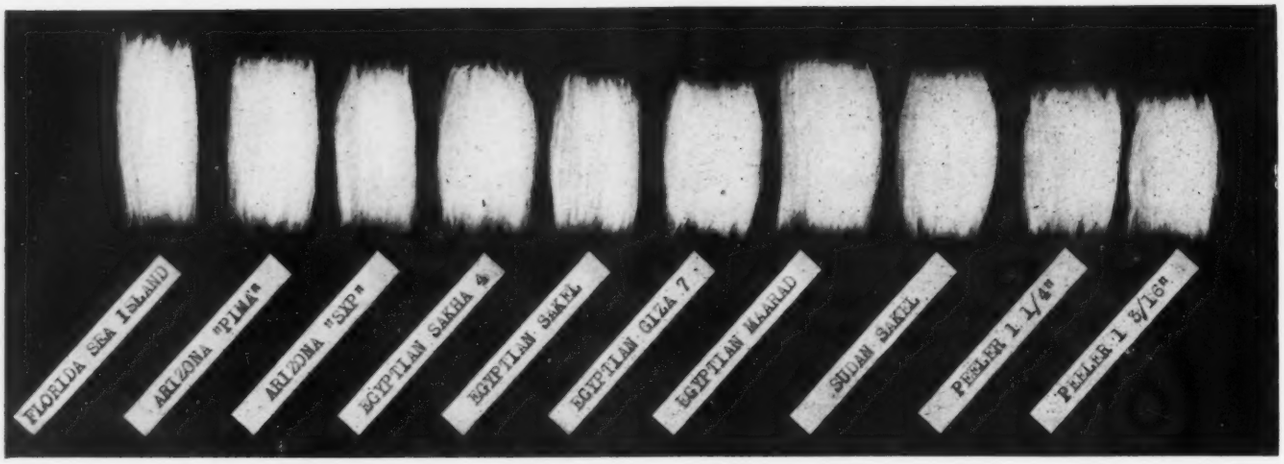
IN its Rayon Issue last September, TEXTILE WORLD suggested that there was a need for a new generic name for staple fiber. It was pointed out that the term "staple fiber" not only is confusing to the textile man, due largely to the ambiguity of the word "staple," but from the standpoint of consumer acceptance, is entirely lacking in esthetic appeal. Finally, it was emphasized that the term "artificial silk" undoubtedly retarded acceptance of rayon for a number of years, and urged that the same mistake should not be made again.

As specifications, it was indicated that the new term should be simple, phonetic, and—if possible—descriptive. So saying, the editor threw open his mail to suggestions.

These have come in at a good rate and have been published as they arrived. We are now exposing them en masse to the selection of our readers. Each reader has one vote. Let us have yours. The term receiving the largest number of votes will be passed on to the industry as a possible substitute for the present inadequate designation of this increasingly important fiber.

The complete list of suggestions rereceived to date is given herewith.

Ace-fille
Belyon
Blandray
Blandura
Celfil
Celfispun
Celflock
Cella
Cellspun
Cellure
Celvezel
Cutrayon
Cutron
Delicell
Durayarn
Fibranné
Fibray
Fibraynné
Fibrene
Fibrilon
Fibron
Fibronet
Filacede
Filacet
Filray
Filrayon
Flocco
Flockon
Flockray
Hirson
Lanoray
Lanorayarn
Lanorayon
Linda
Luray
Lux
Luxon
Mecha
Melyon
Mollon
Molray
Noyar
Panyon
Ray
Rayarn
Raybron
Raycut
Rayene
Ray-fille
Rayflock
Rayhair
Raymode
Raymol
Rayonet
Raypleon
Rayspun
Raytex
Scoron
Sella
Sevron
Shagray
Shagron
Spun-Ace
Spunrace
Spunray
Stapleon
Staplon
Stapray
Staray
Synsta
Synstaple
Truvon
Tween
Vybra
Vybray
Wolaine



Sea-Island Cotton

Revival a romance with very practical possibilities

By Mildred G. Barnwell,

Executive Assistant, Southern Combed Yarn Spinners Association

The information regarding the Sea-Island cotton revival was furnished the author by Paul Ceresole, in charge of the foreign cotton department of Jones, Gardner & Beal, cotton merchants of Providence, R. I. Through a fluke the 15 bales of the 1934 Sea-Island crop were included in a lot of cotton bought by this company. Mr. Ceresole, familiar with the market of extra long Egyptian staple, felt there was a decided need for more of the domestic Sea-Island cotton. He became very much interested in the possibilities of a Sea-Island revival and persuaded a friend to run a test on the 15 bales. The results being encouraging, he bought the entire crop the following year . . . more as an incentive for the farmers to continue planting Sea-Island cotton than as a merchandising deal. This past season, 1936, he spent several weeks in north Florida buying Sea-Island, studying conditions and assisting ginners and farmers.—*Editor*

NEWS of the revival of Sea-Island cotton planting sounds like a "phoenix rising from its ashes" story—the only difference being that the former is actuality, the latter legendary. Both are romances. The very name "Sea-Island cotton" brings to mind all the fanciful stories of the long ago era of fabulous plantations which flourished for two centuries on the group of coastal islands just off the South Carolina and Georgia mainland.

Those were the days when exclusive contracts were entered into by the plantations to supply certain European manufacturers with this high-quality staple; when every precaution was taken by the planter to insure careful seed selection. While most of the island plantations had private roller gins, insuring in this way against any mixture of seed, some went so far as to have their staple hand-ginned as in the pre-Eli Whitney days, having a standard rule that each darkey after all other chores for the day were done had to fill a boot with cotton seed.

Those were the days when the annual production of Sea-Island cotton amounted to 100,000 neat 400-lb. bales, wrapped in clean new sugar bagging, folded and hand-sewn at the seams; when the staple was bringing three times the average price for ordinary Upland cotton and 75% more than Egyptian. Those were the days before the boll-weevil, although as early as 1914 a decline in production of Sea-Island cotton was noted, due to low prices and neglect of seed selection.

Sea-Island territory was lush feeding ground for the weevil. The climate was too warm and damp to kill the hibernating swarms during the winter; the crop too late in maturing to escape further onslaughts of the migratory members of the family.

Discard of the exclusive contract system, plus drastic results from one or two market-cornering manipulations, plus arrival of the boll-weevil in 1917, started a decline in production that year which was continuous for the next 16, dropping from a 100,000-bale annual crop to a minimum production of 7 bales. The roller-gins were dismantled in the Sea-Island districts and moved to Arizona for Pima use; complete and utter poverty descended upon the glamorous Sea-Island plantations; many went for taxes, others were bought up as resort homes by rich outsiders; mills built for Sea-Island switched to Egyptian or Sudan Sakel.

But complete extinction for this royal breed of seed was not to be, for there was still left a small Government experiment station on one of the coastal islands and from year to year a few bales were produced, ginned, and the seed selected. It was such a small project that it continued, forgotten by busy Washington, until in the effort to cut expenses during depression years the station was remembered and the decision rendered that it was needless extravagance. Word was sent down that it would be closed in 1933.

However, the same depression that closed the Sea-Island experiment station brought Upland cotton to the market levels of 5c. a pound and renewed the ambition of several progressive planters in north Florida for

a Sea-Island revival. Result: the fifty bushels of seed, the last harvested by the little experiment station, were distributed among a few of these Floridians farming in Gilchrist and Alachua counties. From the 50 bushels of Government seed, the 1934 crop (first of the revival), of 15 bales, was picked.

Sea-Island cotton is more susceptible to boll-weevil than all the other varieties, due to the thinner walls and softer texture of the bolls. On acreage of heavily fruited plants of Sea-Island cotton, the entire crop has been known to be completely destroyed by weevils in only a few days of wet weather, while adjacent plots of Upland have shown little damage to their bolls. Without adequate boll-weevil control a Sea-Island crop is hopeless.

When the news of the 1934 crop of 15 bales reached the ears of George D. ("Bug") Smith, former Government entomologist now residing in Madison County, Florida, he made it his business to get some of the seed for distribution among his neighbors. Smith was boll-weevil minded, he had perfected a new method of poisoning (the mop system—calcium arsenate, cane syrup and water, mixed and applied by mop directly to the square) and with it he could overcome weevil hazards.

The small group of Florida Sea-Island farmers diligently poisoned the weevil under Smith's direction and felt assured of a fair crop for the second year, when early in September, 1935, that section was victimized by one of the disastrous Florida equinoctial storms. The promise of a good crop turned into a production of only 165 bales—and this of very poor grade. Even the prospects of future crops were entailed, for, due to the storm, the seed was damaged and showed very poor germinating qualities.

While that was a discouraging factor an encouraging one balanced the books: "Bug" Smith had interested the WPA in Madison county in a boll-weevil poisoning project for the following Sea-Island season. As the Sea-Island farmers were too poor to employ field hands, help on this score meant that more acreage could be planted with safety and so in the third crop-year of the Sea-Island revival 3,500 to 4,000 acres in Madison (predominantly), Gilchrist, Alachua, Suwanne, Columbia, Union, Baker, Bradford, Hernando, LaFayette, Levy, and Hamilton Counties were given over to Sea-Island cotton. Although the largest portion of the acreage had poor stands due to storm-injured seed, about 900 bales were ginned in Florida and 70 bales in South Georgia (the interest in the revival having spread there), all bringing a price far above best grade Delta long staple.

For a successful 1937 crop, enthusiasm is registered in several forms: Governor-elect Fred Cone of Florida has appointed a Sea-Island committee, with himself as chairman, to boost the revival possibilities; WPA projects assuring adequate boll-weevil poisoning in all Sea-Island growing communities are underway. Since for Sea-Island cotton the vital boll-weevil control is a hand-application method and money is too scarce to employ the extra hands, assistance of the Government along this line is a most important item.

At least 10,000 to 12,000 acres in Florida will be put into Sea-Island cotton this coming season. While it is a dangerous gamble to estimate cotton production until the ginnings are recorded, with a decent season the yield should be around 5,000 bales. Experimentation in its revival is over; it is a newly established industry.

And what of this Sea-Island baleage? Is there a place for it now? The answer is decidedly YES! Certain European manufacturers are still anxious for this cotton; certain domestic mills would gladly turn from imported cottons to Sea-Island staple. It makes a finer looking and stronger yarn than any other cotton due to its extreme length in staple with the resulting high-breaking strength of the yarn. For 120s and numbers ranging above, for extra quality thread yarn, for fine lace yarns and for some newly developed specialty fabric yarns, it is unexcelled.

With two points in view—constant war on the boll-weevil which means mop poisoning at least once a week, and careful seed selection to maintain the pure-bred Sea-Island type—planters of this staple may look forward to a profitable revival of a one-time great branch of the cotton growing industry, for products made from Sea-Island cotton command prestige and price in any market.

Blackburn

The dense foliage of a field of Sea Island is shown above.

At left are bales of the 1936 crop, the center one showing the old-style putup.

A staple comparison is shown on the opposite page.

In the Month's Textile News

Cotton Textile Group Now in Japan

BY the time this issue appears, the group of American cotton textile manufacturers which sailed for Japan from San Francisco Dec. 24 to seek a voluntary regulation by Japanese manufacturers of their rapidly increasing exports of cotton goods to this country, will be in the midst of its conferences there. The group is scheduled to arrive in Japan Jan. 8 and to sail on return trip Jan. 24 or 25. Headed by Dr. C. T. Murchison, president of the Cotton-Textile Institute, the mission includes Donald Comer, president of the Avondale Mills and of the American Cotton Manufacturers Association; Cason J. Callaway, chairman of the Callaway Mills; and Harry L. Bailey, president of Wellington Sears Co. The fifth member of the group, Hervey Kent, treasurer of Exeter Mfg. Co., was compelled to cancel his reservations because of illness. Robert Phillip, editor of *Cotton*, accompanied the mission as its secretary.

"I am sure," said Dr. Murchison before sailing, "that every member of the American cotton textile mission is deeply impressed by the probability that we are breaking first ground in a new technique for a solution of international trade problems."

Added evidence as to the need for some solution of the problem was the statistical story of imports of velveteens and corduroys during the first ten months of last year, as released by the Department of Commerce. Vast increases were shown over those for 1935. Imports of cotton velveteens during the first ten months of 1936 totaled 4,585,793 sq.yd. valued at $667,363, compared with 1,818,517 sq.yd. valued at $282,391 in the calendar year 1935. Japan supplied 4,561,256 sq.yd. valued at $649,934 in the ten months ending October, 1936, against 1,793,557 sq.yd. valued at $268,122 in the calendar year 1935.

For the ten months of 1936, imports of corduroys totaled 447,737 sq.yd. valued at $88,368, of which 437,933 sq.yd. with a value of $85,836, were from Japan. In the calendar year 1935 imports of corduroys amounted to only 13,093 sq.yd. valued at $3,978.

Delta Cotton Crop Tops All Records

WAREHOUSE receipt statistics from the Southern Cotton Shippers Association, Memphis, Tenn., as of Dec. 10, show that the Delta has broken all records this year in its cotton bale harvest; 1,002,960 bales have been received in warehouses at Delta points since Aug. 1 as compared with 644,219 bales same week 1935 and 556,278 bales same week 1934. The 1936 season crop already tops the largest previously on record for the Delta —975,000 bales in 1925.

Despite the large baleage for this season, however, users of long staple cotton, especially 1⅛" staple, will have a real scramble to cover their needs before the harvest of the 1937 crop. This is due to two facts: increased consumption on part of mills and approximately one-third of the Delta crop being short staple, setting a precedent in its own right.

One authoritative source in the Delta says he expects the long staple basis to reach war-time heights before this season is closed.

Acme

NEW MECHANICAL COTTON PICKER—This is the long-heralded International Harvester Co. cotton picker, which is now on exhibition at the Museum of Science and Industry in Chicago. A set of rotating discs removes the cotton from the barbed spindles. In the above photograph, the potted cotton plant indicates the point at which the cotton enters the device to be stripped.

Textile Groups Not At Berry Meeting

THE major groups of the primary textile industry were not represented at the conference called by Major G. L. Berry, coordinator for industrial cooperation, in Washington, Dec. 10 and 11.

The first day of the conference was devoted to an open meeting while the sessions of the second day were executive in character, and were largely given over to consideration and approval of committee reports. Among the principles endorsed was one to the effect that Congress should set up a commission empowered to determine standards in connection with maximum work-week, minimum wages, and child labor.

It was also proposed that the Federal Government should set up an advisory council representing management, labor and the public to undertake studies and analyses in industry for the information of the President and Congress.

Lowell Alumni Hold Biggest Reunion

REVIVING a custom of pre-war days, the Alumni Association of Lowell Textile Institute held a rollicking mid-season reunion on Dec. 12 at the University Club, Boston, and enjoyed an attendance of close to 300, surpassing any previous record by well over 100. It was a banquet, with Herbert A. Currier, '06, of Waterman, Currier & Co., as the amiable toastmaster. Franklin W. Hobbs, president of Arlington Mills and one of the two living members of the institute's first board of trustees, discussed the great strides forward that have been made in textile education, as exemplified by progress at Lowell. President Charles H. Eames traced the history of the institute; and John A. Calnin, of U. S. Bunting Co. and chairman of the trustees, discussed its ever-growing importance to the industry.

Textiles Become Visible

Transparent wrapping aids sales, consumer mills find

ONE of the significant developments in textile merchandising during the recovery period has been the increased emphasis on packaging. This is evident especially in the growing use by mills of the transparent and semi-transparent wrapping materials. These materials have proved so helpful in stimulating textile sales that they are being given constantly wider application in the industry. Obviously the chief field is in consumer packaging; the transparent materials, for example, might be termed a "natural" for that purpose. However, these wrappings, also are being used to some degree in industrial packaging.

First introduced in textiles about 1931, the transparent materials have proved so valuable as a business-builder that they are now used in most textiles selling direct to the store. This includes: all knit goods, especially hosiery, and ribbons, yarns, spools of thread, blankets, diapers, the whole babywear field, all types of towels, table linen, lace curtains, throw rugs, men's neckwear and sheets and pillow-cases.

Use of transparent materials for industrial packaging, while still in early stages, is on the increase; some cotton mills use transparents to wrap bolts of fabric selling to the garment trade and find this helpful as a time-saver for the customer. Transparents also are being used to wrap rayon yarn cones; in this instance, the chief advantage reported by the mill is that cones, so wrapped, retain the necessary humidification and lengthen the time that the cone remains uniformly conditioned. Fabric mills use transparents as wrappings for swatches sent out to the garment trades or to retail price goods buyers.

Two Basic Types

It should be explained that there are two basic types of transparent cellulose wrapping material—viscose and acetate. Both have a high degree of transparency, permitting maximum visibility of textiles so wrapped, and both are proving definitely valuable to the textile industry. Viscose type, which is less expensive, at present enjoys the larger use in the wrapping field. Acetate type, although slightly higher in price, has found an increasing acceptance. In the field of window containers, acetate, because less inclined to shrink in long-time use, is the more favored material. However, moisture-proof viscose also is being used for this purpose. In addition to the transparents there is also the long-established and important group of semi-transparents. These, lower in price than the transparents. are favored for various uses, including inner wrappings for boxed textiles, especially knit goods.

Ware Shoals Mfg. Co. wraps its diapers in Cellophane.

The development of transparent materials as textile packaging has had two phases. In 1931-1933, it was used solely for its value in reducing losses due to soilage of merchandise. Since 1934, however, it has been shown also to have important advertising and sales promotion value. This advertising value has been made possible by (a) printing on the transparent wrapper and by (b) the use of special descriptive mill labels, visible through the wrapper. Printing, both in black and colors, of decorations which dramatize the uses for the merchandise is a feature. For example, the wrapper for sheets might show a comfortable-looking bedstead, or the wrapper for sports shirts might depict tennis, golf or other outdoor scenes.

A Sales Inducement

Thus, the advent of transparent wrappers has two basic advantages to the merchandiser of textiles—visibility of the product itself, plus printed sales inducement. Then there are three supplementary aspects which merit consideration—the gift factor; the remembrance value making for repeat business; and the elimination of soilage, already referred to, with which may be combined the hygienic value. Mills have found the gift aspect especially important; the use of transparent material in beautifying the more lowly textiles,

Gotham's gold stripe stockings visible through Sylphrap, printed by Forbes, Boston.

Packaging Chatham blankets in Cellophane before boxing.

such as towels, dish cloths, etc. has helped to lift these into the gift class.

With respect to the hygienic or sanitary factor, it would seem that mills could exploit this sales argument more effectively than they do, in promoting such packaged textiles. Hygiene played an important part in increasing consumer sales of babywear when wrapped in sealed transparent wrappers, because such wrapping helps to make the contents germproof, and it may be expected that the same point later will be utilized in promoting other packaged textiles.

Use of transparent wrappers has become so established in certain textile divisions that mills are developing their own machines to do the packaging job. Two large companies have perfected equipment for the wrapping of diapers, and indications are machines for wrapping of other merchandise soon may be available. For the present, most mills using transparent materials have the wrapping done by crews of girls in departments created for this purpose.

With respect to machinery, we might cite the recent development of a semi-automatic device which forms envelopes for packaging hosiery. These envelopes made from moisture-proof transparent material, are constructed without adhesive, heat being used for sealing. The device is adjustable to various sizes of envelope. The same source also has equipment for wrapping textile packages in transparent materials, as well as machines to handle unusual merchandise more quickly than by hand. Printing on transparents, a highly specialized process controlled by patents, is done by a group of "converter-printers" who have this task pretty well standardized.

Various novel uses for transparent materials are developing. For example, several enterprising hosiery manufacturers now use acetate material to fill out the legs of stockings in packaging.

Wrapping knit underwear in Protectoid

The advent of the transparent wrapper promises to have far-reaching effects in stimulating, not only the merchandising, but also the designing, of textiles. As result of this new trend the "eye-appeal" of textile now is greatly accentuated and it would be logical to assume that this would prove an impetus to textile design generally.

Federation of Textiles Elects

Selection of G. H. Conze marks return to tradition

AS the first step toward a return to the fundamental policies which governed its predecessor, the historic Silk Association of America, the National Federation of Textiles, Inc., through its board of directors, on Dec. 21, elected G. H. Conze, vice-president of Susquehanna Silk Mills, to the post of president. Mr. Conze, as vice-president of the Federation, had been acting head of the organization since last July, when the late Peter Van Horn, who had been president since NRA days, withdrew from activity on a six months' leave of absence. Mr. Van Horn resigned from the presidency early in December. The directors also elected W. Stunzi, president of Stunzi Sons Silk Co., Inc., as vice-president to succeed Mr. Conze.

While no details as to matters discussed at the directors' meeting have been disclosed, it is understood that the Federation favors an administrative policy which will keep it in more direct contact with the silk-rayon industry's needs. The selection of a trade member as president is interpreted as a first move in that direction. Members of the Federation, it is reported, have indicated a desire for that type of organization as being more efficient and, following this line, it is understood that hereafter the Federation will place increased emphasis on cooperative action.

The directors discussed plans for an annual meeting of the Federation early in 1937, and it is expected that the new policies of the organization will be crystallized at that gathering. They also adopted resolutions of sympathy on the sudden death of Mr. Van Horn.

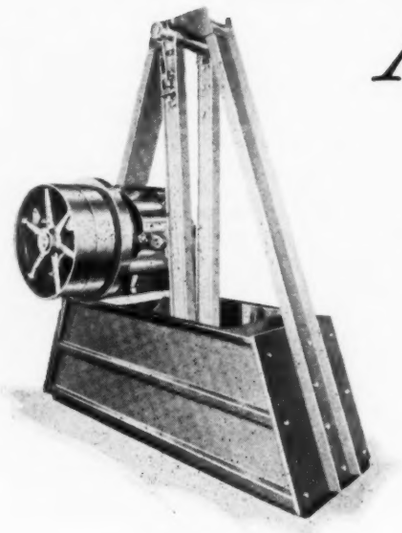
In addition to Mr. Conze and Mr. Stunzi the following attended the meeting: Samuel Bertcher, Edmund Wright Ginsberg Corp.; Ward Cheney, Cheney Bros.; Jarvis Cromwell, Wm. Iselin & Co. Inc.; Otto Froelicher, Schwarzenbach Huber Co.; William Menke, Menke, Kaufmann Co. Inc.; E. C. Rossmassler, Sauquoit Silk Co.; Henry E. Stehli, Stehli & Co.; A. D. Walker, A. D. Walker & Co.; M. K. Yorks, Bloomsburg Silk Mill.

CONZE

STUNZI

Variety of methods and equipment used in fulling, scouring and bleaching

Athletic and Ski Socks



Modern form of kicker mill

Sport socks work while wearer plays

AT the present time athletic and ski socks are being manufactured in numerous varieties and colors. Many of the higher quality socks are made from such grades of wool as B supers. In the lower qualities, shoddy made from paper-maker's felts and blends of wool stocks are used. The very cheapest are made from all shoddy. A few manufacturers are using a core yarn.

With these variations in qualities of yarns used, there is naturally a wide latitude in the wool oils or stock lubricants found on the socks. This naturally means that the strengths and types of fulling and scouring materials will also vary. The wool oils range from nearly all mineral oil, in the case of yarns composed of nearly all shoddy, to lard oil and other types of nearly all saponifiable oils. The more mineral oil present, the greater will be the amount of emulsifying agent needed in fulling and scouring. When the socks contain bright-colored yarns, excessive amounts of soda ash cannot be used with the soap, by reason of the fact that too much alkali will cause the bright colors to bleed or fade.

Most colors will stand a concentration of 4 oz. per gal. of soap and 4 oz. per gal. of soda ash. When a greater concentration of soap and soda ash is required to remove the oils, and this increased concentration causes the colors to bleed, a combination of soap, solvent, and soda ash is indicated. One of the solvents commonly employed in conjunction with soap and soda ash is one of the cresylic acid type. Most of the difficult-to-remove oils can be removed by the use of 4 oz. per gal. of soap, 3 oz. per gal. of cresylic acid solvent, and 4 oz. per gal. of soda ash.

Athletic and ski socks are generally scoured before fulling; but frequently they are scoured and fulled in a combination process.

Kicker Type Mill

Sometimes a kicker type, or falling stock, fulling mill is used to scour and full the socks. When this type of equipment is employed, the dry socks are entered into the mill and wet down with warm water at 120°F. After the goods have been uniformly wet out, sufficient soap stock liquor as described above is poured onto them to make a good, rich, creamy suds. The goods are worked in the suds for ½ to ¾ hr. The suds are drained, warm water is run in, the goods are kicked for 10 min., and the water is drained off. If necessary, these operations are repeated until the goods are clean. If the socks are not felted to the desired size and cover by this treatment, they are extracted and reentered into the fulling mill. Soap solution is slowly poured onto the goods until a sample taken from the mill shows a drop or two of suds being squeezed out when the sample is twisted and squeezed by hand. Next the socks are kicked and felted to the desired size and cover, rinsed by running in warm water and kicking for 10 min., and drained. The rinsing is repeated until the goods are free from soap.

Another type of equipment sometimes used to scour and full is the laundry wheel. Usually a wooden wheel is preferred. The socks are entered into the wheel and warm water is run in until a depth of 6 in. is reached. The stock soap liquor is poured in a pailful at a time until a good, heavy suds has been developed and sustained. The goods are scoured for ½ hr. and drained. If a yarn of good felting qualities is used, the stocks can be felted and given a good cover merely by continuing the turning in the laundry wheel. When they have been shrunk to the desired size and the proper cover has been obtained, warm water is run in to the 6- or 7-in. level. The goods are rotated in this for 5 min., drained, and rinsing is repeated until the socks are free from soap.

Bleaching with Peroxide

Bleaching of white socks with colored welts is carried out with peroxide. The bath is made up in the usual manner prescribed for peroxide bleaching of wool. Either sodium peroxide or hydrogen peroxide is satisfactory. Ordinarily the socks are bleached in a still bath in a wooden vessel. The suitable pH value is approximately 10.2 at the start, and the temperature can safely be raised to 120° F. It will generally take 2 to 3 hr. to obtain the desired whiteness. After bleaching, the socks are rinsed, blued, and extracted. They should be boarded immediately.

Usually there will be sufficient variation in size after boarding to take care of the size requirements without knitting the stocks to size. General opinion is that the kicker type mill produces the most uniform size and provides the best cover in the quickest time. The rotary laundry wheel fulls slower, and fulling is frequently hastened by placing one or two logs the length of the inside of the wheel to produce the necessary pounding required to full the goods quickly.

Systematic Purchasing

Assures better-quality supplies at lower costs

By Charles van de Putte

Abbeville Cotton Mills

IN the article, "Back-Door Losses," which appeared in the December, 1935, issue of TEXTILE WORLD, Milton M. Abrams stated that the purchasing departments of most mills do not receive the attention which is due them. The present writer agrees with Mr. Abrams. In fact, in many mills there is no regular purchasing agent; instead the purchasing is carried out by the superintendent, who is usually a busy man with neither the time nor the inclination to purchase supplies in a systematic manner. Regardless of the size of the mill, some definite system of purchasing should be set up, and buying policies formulated and adhered to.

Actually, the proper functioning of the mill depends to a large extent on the purchasing department. For example, every time a machine stops for repairs, there is a decrease in production; the longer the machine is stopped, the greater is the loss. A well-operated purchasing department will reduce these losses to a minimum—first, by having repair parts on hand when needed; and, second, by buying supplies of good quality, so as to avoid the necessity of constantly changing parts. In emergencies, certain supplies and repair parts must be bought at any price; but it is the duty of the purchasing department to make certain that the occasion will seldom present itself when an exorbitant price has to be paid.

Quotations and Requisitions

One of the first things which should be done to insure efficient purchasing is to adopt a definite policy for securing quotations. These quotations should be obtained long before it is necessary to put in the actual orders. Once an overseer makes a requisition for a given item, there is usually no time to be wasted in looking around and getting quotations. As a rule, requisitions for purchases should originate, not from the overseer, but from the supply room or stores department whenever the quantity of any article falls below the minimum reserve, as designated on a card on the bin in which this article is kept.

To facilitate the actual handling of orders, an Item Card (Fig. 1) is made out for each item purchased. In the upper left-hand section, the complete specification of the item is written, as given on the order to the supplier. In the upper right-hand section, the annual consumption of that item is recorded for two or three shifts, as the case may be, as well as the total amount expended in dollars and cents. The date, order number, quantity bought, list price, discount, transportation charges, and supplier are recorded on a separate line for each invoice okayed for payment. Thus, there is a permanent record made of every purchasing transaction. From time to time as invoices are checked and recorded on these cards, inquiries for quotations are sent out to other suppliers or manufacturers. These quotations are recorded in pencil on the back of the respective cards, with the name of the company quoting and the date of the letter to facilitate the finding of the original quotation if the need arises.

ORDER RECORD

ORDER NO.	SUPPLIERS	ORDERED	RCVD.	SUPPLIES ORDERED
4393	Jones Supply Co.	5/13	5/20	2 Gross Hack-saw blades 12", 2 Kegs of Nails,
				5 doz. Brooms, 100 RH stove Bolts 5/16 x 1/2"
4394	C.M. Smith & Bros.	5/13	5/28	300 Picker Sticks #1
4395	John Doe Mfg. Co.	5/14	5/30	20 Take-Up Rollers-42"
				15 ditto -54"
4396	Crompton & Knowles	5/14		
4397	Draper Corp.	5/14	5/30	50 Temples complete
4398	Jones Supply Co.	5/14	5/16	50# Jute Twine, 100 loom bolts 3/8 x 3"
				2 gals. Glue, 2 prs. pliers #6
4399	Citizen's Lumber Co.	5/15	5/16	Lumber For mill house # 43
				ditto # 50
4400	Sherwin Williams	5/18	5/20	5 gals green #461, 10 gals M.V. White,
				2 gals. shellac, 5 gals stain
4401	Bird Iron Works,	5/18		100 blank pick gears
4402	Crompton & Knowles	5/19		3 dobby stands 3-row, 500 chain bars,
				7 parts # 18299
4403	Jones Supply Co.	5/19		100 Loom bolts 3/16 x 3", 200 screws FH #10-3"
				300 FH #10-3½", 400 FH #10-4", 50 stove
4404	Crane Co.	5/19		Pipe Fittings For Dye-House
4405	Citizen's Mfg. Co.	5/19	5/19	Wood For House # 60
4406				
4407				

Fig. 3. Order record

Quantity Differentials

Certain information comes in from time to time regarding quantity differentials, which should also be recorded in pencil on the back of the Item Card, along with the name of the company which gave out this information, as in the case of quotations. Quantity differentials should be carefully watched in order that the quantity ordered may be increased in order to take advantage of the differentials whenever possible. Many supplies have quantity differentials which should be ascertained, even though this may necessitate further inquiries. In making out orders, the question often arises as to the most advantageous amount of any item to purchase. The most economical amount to purchase, of course, will be the largest quantity that will be used during normal operations—providing the saving enjoyed will be in excess of the interest on the money invested plus the cost of carrying in warehouse stock. All this information, as well as additional details which will help in purchasing, should be recorded for future reference and nothing left to memory.

Classifying Items

The writer prefers to use two types of Item Cards. The first is a white card for recording items of which there are only one or two types. The second is a blue card for recording items of which there are three or more types, such as bolts, screws, nails, etc. The white cards (actually the miscellaneous items under any letter) are filed in alphabetical or numerical order from front to rear directly under the index card of the classification to which that item belongs. For instance, under the

letter "C" we might have 26 miscellaneous-item cards (white), and several blue cards under the index cards, such as casters—four types, charts—four types, cloth (felt)—five types, cloth (sheeting)—six types, cloth (miscellaneous)—seven types, each type being represented by a blue item card. This, of course, is but one way of breaking down the item cards under any letter so as to make it possible to find each one quickly.

At the end of each year, the consumption of each item is added up and the amount expended is computed and recorded on the respective item card in the upper right-hand section, as explained previously. The chief advantage of this file is that all facts concerning any item are in a compact form, and pertinent information can be written on the back of the card or attached to it. Those items which cost the mill the most can then be watched closely in an effort to reduce the amount spent, as it may be that the present price is too high or that the supply is not properly used. The design of a certain machine part which is repeatedly breaking should be investigated, with the view of ascertaining whether or not a part of heavier construction or of stronger material should be used. This matter can be taken up both with the supplier of the part and/or with the manufacturer of the machine. A progressive manufacturer will welcome the opportunity to cooperate in determining the cause and remedy of weak spots in his machinery.

The Company File Card (Fig. 2) bears the supplying company's name and address, as well as that of its agent, in the upper left-hand section. In the upper right-hand section are the terms, the name of the salesman who calls on the mill, and the name of the person with whom the mill corresponds. The various items which are bought from this company with the respective list price, discount, f.o.b. point or transportation charges, and service (time required to fill an order from time it is placed) are all separately listed on these cards. This file is a great time-saver when making out orders, writing letters, or when seeking information relative to a certain company.

Order Records

In order to keep informed as to the status of every order at all times, an Order Record File (Fig. 3) is very handy. Each order placed is recorded in this file opposite its respective order number, along with the name of the supplier, date ordered, date received, and supplies ordered. When any order is received, as ascertained from the Daily Receiving Report, the date of receipt is recorded in black pencil in the "received column" if the order is complete. In the event only a partial shipment was made, the items not received are underlined in red, and the date of receipt is written in red. When the order has been received in full, the red date is encircled to show that the order has been completed. Every time one of these Order Record sheets is completed, a line is drawn through all the orders appearing on that sheet to designate that all items have either been received or canceled. Since there

Steel, cold rolled, ¼"
1936

ANNUAL CONSUMPTION
2 SHIFTS: 250 lbs.
3 SHIFTS: $19.25

DATE	OR. NO.	QUAN.	PRICE	DISC.	TRANS.	SUPPLIERS
1/16	4231	100#	7.00cwt	None	Mill	John Smith Co.
4/8	4968	25#	✓	✓	✓	✓
5/6	5344	75#	✓	✓	✓	

Fig. 1. Item card

Doe Manufacturing Co.
415 M Street
New York, N.Y.

TERMS: 2% 10 days
S. M.: Jones, E.K.
CORR.: Smith, M.C.

ITEMS	PRICE	DISC.	F.O.B.	SER.
Picker sticks No.1	.12	none	mill	10
Picker sticks No.2	.12	none	mill	10

Fig. 2. Company (supplier) file card

SERVICE RECORD

Part: Lug strap, canvas — No. 12"
Manufacturer: Brown Mfg. Co
Machine Type and No.: Loom #618
Date Issued: August 6, 1935. — Time: 6:00 P.M
Date Removed: "X" date — Time: 6:00 P.M
Cost of Part: "Z" — Service: Blank hrs.
Cost—Hour: ———
Average of: one — Samples.

Fig. 4. Service record card

is not enough room on this form to record all the items of some long orders (usually machinery parts), the space for "supplies ordered" is left blank and the receiving report checked against the original order. When partial shipments are received, the names of the various parts which are being "back-ordered" are written-in in red, and the regular procedure of partial shipments is followed from then on. This procedure takes but a short time each day and facilitates keeping the status of all orders in mind. Furthermore, those orders that are overdue can then be traced and all orders placed over a long period of time are in a compact form to be used as an index and reference file.

The object of the purchasing department should be to buy the best supplies available at the lowest price, transportation charges taken into consideration. This necessitates the systematic investigation of all supplies. We must bear in mind that we should buy supplies on the basis of the service that the part will render, or "cost per unit of time." This basis has two positive numerical factors which are not so dependant on the human element as is the case when the opinion of the overseers or workers is asked in regard to supplies. They, of course, have no efficient method of checking on the quality of the supplies they use. Systematic buying is designed to bring the service received and the cost of elements together.

Cost and Service Records

A convenient form for this purpose, which requires very little time to work out, is the Service Record Card (Fig. 4). The purchasing department simply notifies the supply-room clerk to investigate a certain number of articles of a specific type, usually about ten. Immediately upon receipt of this notice, the supply room paints a section of the parts to be investigated with some conspicuous color, and fills out the Service Record Card with the name and number of the part, the name of the manufacturer, the type and number of the machine or the place where the item is installed, and the date and time of issue of the part. When the part is worn, it is returned to the supply room, where the date and time are again recorded. Knowing the length of service of the part and the cost, the "cost per unit of time" (1 hr. for example) is readily computed. The average service of all the parts tested is then transferred to a new card, and a record made on the corresponding Item Card. Thus, records of all samples being investigated can be easily found; and samples from other manufacturers can be obtained and systematically tested with a common basis for comparison of the various makes.

Issuance of Supplies

In order to check on the distribution of supply parts to the various departments, and on the men in these departments, all supplies as issued from the supply room should be charged to those using them. From these records, the maintenance cost of any type machine (looms, for instance) per week can be computed and compared from week to week. Some men, of course, will be found who are very economical in the use of the parts, while others will be wasteful and negligent. Those who are the most economical should be studied, and their methods taught to the other men who are doing the same type of work.

Balancing the Mill

By calculation of the machinery required at each cotton-yarn manufacturing process

By Gilbert R. Merrill
Lowell Textile Institute

WE NOW begin a new phase of amount of sliver or roving re-cotton-yarn organizations. In previous articles of this series, which began in the last May issue, the methods of calculating drafts, doublings, and sizes for each process were explained. With this article the discussion turns to the calculation of the amounts of machinery necessary to keep the spinning mill in balance so that the production of one process will be sufficient to supply the next process with just the amount of sliver or roving required.

DETERMINATION of the amount of machinery necessary to keep a mill in balance requires that certain data must be known or assumed as a basis for the calculations.

The simplest form to use for collecting these data and calculations is shown in the accompanying tables. The first column shows the operations used for the particular organization. The second column shows the size produced in each of these operations. The figures in these two columns are taken from the organizations described in the series of articles run from May through December. The third column shows the waste in each operation. Where a mill has handled the stock involved and knows from experience what the wastes will be, actual figures are used. Otherwise, it is necessary to estimate the percentages of waste.

The fourth column shows the percentage of stops for each operation. Figures for this column are taken directly from the machine builders' tables. If the stops in a mill do not agree with the catalog figures, it will be necessary to substitute the actual stops found under mill conditions.

The fifth column shows the pounds produced at each operation in order that the following processes will have just the right amount of stock to keep them going. When balancing a given number of spindles, it is necessary to determine the pounds produced by these spindles and then to work back to the pounds for each process. If it is necessary to calculate the equipment for a given poundage of yarn, the calculation is just that much simpler.

The sixth column shows the pounds produced by one unit (spindle, delivery, machine, etc.). This may be actual production as found by experience or a calculated figure. In this case, the figures are taken from machine builders' catalogs and show the production per 10 hr., with an allowance made for stops as shown in the fourth column.

While 10 hr. is hardly a working day at the present, the production per 10 hr. is a very convenient figure. Pointing off one place gives the pounds per hour or multiplying by four gives the pounds for a 40-hr. week.

The seventh column is calculated from columns five and six, and indicates the number of units needed when the pounds required are as in column five and the unit production is as in column six. The eighth column shows the speed of the machines necessary to give the productions shown in column six. The ninth column shows how the total units are divided into machines and is particularly important in spinning, roving and drawing. The tenth column gives such details as serve to show the machine selected for the production in column six. The eleventh and twelfth columns show the floor space required by the machines, without alley space.

As many organizations follow the same general line of calculations, it is hardly necessary to go through the details of every example shown in the previous articles. Consequently, only a few mills will be worked out here, each of these being selected to illustrate some particular point.

Machinery for 13s

The first illustration, given in Table I, is a mill having 20,000 spindles to make 13s warp yarn, as described in the July, 1936, issue. The same principles followed here will serve to find the equipment for a mill to make the 6s organization or the 22s of the sheeting organization described in the same issue.

For convenience, most of the waste figures have been kept in whole numbers. Probably 3% spinning waste is fairly high; but, when the roving left on the bobbins from the creel is considered, it is not impossible. Many mills keep their roving waste between 0.5 and 0.75% per operation, but in this case the waste for both processes has been taken as 1% for convenience in figuring.

In this solution, the stops, speeds, and suggestions as to details given in the catalogs have been followed. Using 20,000 spindles at 0.54 lb. per spindle produces 12,800 lb. of yarn. This figure in only 97% of the roving needed from the intermediates; hence, $12{,}800 \div 0.97 = 13{,}196$ lb. of intermediate roving. Then $13{,}196 \div 0.99 = 13{,}329$ lb. of slubber roving needed. Continuing this procedure, it is possible to complete column five, showing the pounds of stock each operation must produce.

Knowing the total pounds needed, it is then necessary to find the units required in each operation. This is possible only after determining the pounds each unit will produce. This necessitates the selection of a size of frame (in the case of a new installation) and a speed suitable for the product. The selection hinges on the quality of the goods to be produced and the cost at which they must be delivered. This means that the same counts may be made quite differently for different products and that personal judgment has considerable to do with the selection of these items.

For the 13s in question, it is very likely that 9x4½ intermediates and 12x6 slubbers would be selected. Catalog speeds and productions are shown.

In drawing stock of the staple commonly used for this yarn, it is desirable to have small drawing rolls, either 1 or 1⅛ in. in diameter. Metallic rolls are very common for this type of work; hence the selection of of 1⅛-in. metallic rolls. The roll speed of 300 r.p.m. is fairly conservative, which would make it possible to go slightly faster if the organization were ever altered to run 50-grain sliver.

Ten revolutions of the card doffer per minute is a fairly average speed. If the speed is reduced, costs will rise; but, on the other hand, higher carding speeds may alter the quality adversely. Picker calender-roll speeds are generally given less notice than the pounds produced. While earlier practice tended to keep picker productions (especially finishers) not over

3,000 lb. per 10 hr., today's tendency is to produce more than that, say 3,500 lb. per 10 hr., on the single-process picker. As opening equipment will ordinarily handle up to 20,000 lb. in 10 hr., there is no problem.

Column seven, the units needed, is calculated by dividing the pounds per unit (column six) into the total production needed (column five); e.g., intermediate, 13,196 ÷ 5.51 = 2,395 spindles.

In the case of a new installation, dividing up the units into frames involves more judgment, especially with consideration of the mill dimensions to be used and the arrangement of the machines in the mill. When following the older scheme of arranging spinning frames lengthwise of the mill, the length depends upon practical items of a mechanical and operating nature. If spinning is to be arranged across the mill, the length must conform to the space available.

In this illustration, the mill has been taken as having four 25-ft. spans. From the catalog on frames of 4-in. gage, it is found that a 240-spindle frame takes 42 ft. 6 in., which leaves space enough in a 100-ft. mill for alleys with two frames across; hence, 84 spinning frames of 240 spindles each.

Considering a similar arrangement for intermediates brings up the question of the spindles per frame. A frame having 126 spindles has a length of 40 ft. However, this would mean 19 frames and, if frames are still worked in pairs, would make an awkward arrangement. Using frames with 120 spindles, which are 38 ft. 3 in. long, requires 20 frames.

Slubbers are quite likely to be arranged differently than other roving frames and are generally in pairs. Hence, they do not need to correspond in length to the other frames. Slubbers with 76 spindles are 34 ft. 11 in. long, and it would take more than eight of them. Therefore, nine would be required. If slubbers were run in threes, this would work out nicely; but where slubbers are run in pairs this would be awkward. In this case frames short enough to require ten would give five pairs. Each slubber with 64 spindles would be 29 ft. 11 in. long.

Drawing frames are usually arranged across the mill, and so the lengths of frames should be arranged to fit. In this case, by running the frames at 310 r.p.m., 96 deliveries would be enough; but keeping the speed at 300 r.p.m. would require 100 deliveries as the most suitable set-up. One hundred deliveries may be arranged in several combinations; but, in this case, the following seems as practical as any:

Two frames of four heads, each having six deliveries; two frames of three heads, each having six deliveries; and two frames of two heads, each having four deliveries. The first frames are 40 ft. 3 in. long, while the second frames are 44 ft. 8¼ in. long. One frame of each of the above may be arranged across the mill and still leave plenty of alley space.

MACHINERY FOR 13s Warp Yarn SIZE OF MILL 20,000 Spindles

1 OPERATION	2 SIZE	3 WASTE %	4 STOPS %	5 TOTAL POUNDS	6 LB. PER UNIT	7 UNITS	8 SPEED	9 MACHINES	10 DETAILS	11 LENGTH	12 WIDTH
Spinning	13	3	10	12,800	0.64	20,000	8,000	84-240	4"gg 2⅝"ring	42'-6"	3'-3"
Inter.	1.85	1	11	13,196	5.51	2,395	950	20-120	9x4½	38'-3"	3'-6½"
Slubber	0.55	1	19	13,329	21.23	628	650	10-64	12x6	29'-11"	6'-10"
Drawing	55	0.5	20	13,464	137	98.3	300	2-4x6 2-3x6-2x4	1⅛" met.	40'-3" 44'-8¼"	5'-11"
Carding	55	7	10	13,512	120	112.5	10	113	27"	10'-6"	5'-4"
Picking	15	1	10	14,529	3.580	4.06	8.99	4	—	49'-0"	6'-8"
Horizontal	—	0.5	—	14,689	15,000	1	—	1	—	10'-6"	6'-6"
Vertical	—	2	—	14,769	15,000	1	—	1	—	9'-8"	5'-7"
Vertical	—	1	—	15,088	15,000	1	—	1	—	9'-8"	5'-7"
Bale Breaker	—	4.5	—	15,248	15,000	1	—	1	—	33'-9"	6'-10"
In Bale	—	—	—	15,966							

TABLE I

MACHINERY FOR 22s Sheeting Filling SIZE OF MILL 20,000 Spindles

1 OPERATION	2 SIZE	3 WASTE %	4 STOPS %	5 TOTAL POUNDS	6 LB. PER UNIT	7 UNITS	8 SPEED	9 MACHINES	10 DETAILS	11 LENGTH	12 WIDTH
Spinning	22	2	12	7600	0.38	20,000	7925	70-288	3"gg 1⅝"ring	38'-6"	3'-3"
Fine	4.50	0.5	7	7755	1.85	4192	1150	28-152	7x3½	36'-6"	3'-4"
Inter.	1.40	0.6	17	7794	7.82	996	950	10-102	9x4½	33'-0"	3'-6½"
Slubber	0.50	0.4	22	7841	24.00	327	650	6-56	12x6	26'-7"	6'-10"
Drawing	60	0.5	20	7873	193	40.8	300	1-4-6 1-3-6	1⅛" met.	40'-3" 30'-5¾"	5'-11"
Drawing	60	0.5	20	7913	193	41.0	300	1-4-6 1-3-6	1⅛" met.	40'-3" 30'-5¾"	5'-11"
Carding	60	6.	10	7953	131	60.7	10	61	—[1]	10'-6"	5'-4"
Picking	15	1	10	8460	3470	2.4	8.72	3	—	49'-0"	6'-8"
Buckley		0.6	—	8553	15000	1	—	1	—	7'-10"	6'-10"
Buckley		1.0	—	8609	15000	1	—	1	—	7'-10"	6'-10"
Vertical		1.5	—	8702	15000	1	—	1	—	9'-8"	5'-7"
Bale Breaker		4.9	—	8841	15000	1	—	1	—	22'-0"	6'-10"
				9297							
Fine	3.50	—	10	7755	2.61	2971	1150	20-152	7x3½	36'-6"	3'-4"
Inter.	1.20	—	21	7794	9.47	823	950	8-102	9x4½	33'-0"	3'-6½"
Inter.	3.50	—	10	7755	2.61	2971	1150	20-152	7x3½	36'-6"	3'-4"

TABLE II

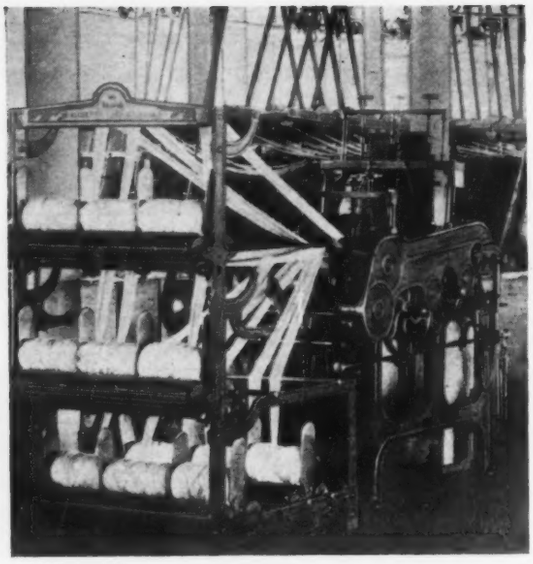
Machinery for 22s Sheeting Filling

The 22s sheeting filling is representative of the average count of yarn spun in the United States. When using regular draft in roving and spinning, 22s require three processes of roving. Two drawing processes are quite common for this count.

The illustration give in Table II is figured on the basis of 20,000 spindles, thus giving a ready comparison with the 13s equipment. Note that the production per unit in spinning is only 0.38 lb. and the total is only 7,600 lb., which is about 60% of the corresponding figure for 13s. This reduces the quantity of material to be processed in all the operations.

In this case, the roving wastes have been taken in fractional percentages as they are likely to occur in the mill. Catalog figures for stops have been used. The opening machinery will be running with a very light load, but but there is no way of getting the opening without one complete set of machines. Probably this same equipment could handle enough stock for 30,000 spindles on this count.

As has been pointed out in one of the earlier articles, using long draft in spinning and making coarser fine and intermediate rovings reduces the number of spindles necessary on the two operations very materially. Finally, if long draft is used in both roving and spinning, all the slubber and intermediate spindles are eliminated. However, by observing the number of machines in each operation, it can be seen that these two operations do not involve even one-half the frames used and the saving is not so great as at first appears. When cans are put up back of an 8x4 or a 7x3½ roving frame, the creeling is very much reduced, which makes a saving in labor not apparent in the calculations. In the lower part of Table II, the two optional possibilities of long draft are shown.



"There is no substitute for good gilling"

For Better Gilling

Suggestions concerning moistening, oiling, drafting, tensioning, and other matters

By John C. Lowe
Lowell Textile Institute

WOOL gills most easily when it contains the proper amounts of moisture and oil. During carding, the moisture quickly evaporates; and, as the wool leaves the card, it is too dry for gilling. When backwashing follows the card, it is possible to have the backwashed stock delivered with the desired amount of moisture.

What is the correct moisture content? It must be high enough to insure that after two or three processes of gilling the amount of moisture remaining will be correct for combing. Experience teaches that from 18 to 20% of moisture is not excessive for combing. The oil in the stock softens the fiber and reduces friction. The moisture increases the extensibility of the fiber, with the result that the fiber will stretch, rather than break. Dr. Townend, of the Wool Industries Research Corporation, of England, in his thesis, "A Study of Fiber Breakage in the Conversion of Raw Greasy Wool into Worsted Top," has this to say of the relative value of oil and moisture with regard to their effect upon both average staple length and percentage of noil:

Moisture and Heat Important

"Fiber lubrication is important and warrants much closer attention in practice than it usually receives. . . . Application of oil in the form of emulsion is the soundest method, because of the finely divided form, better distribution, and additional moisture. . . . Regain of the wool and heat as supplied by steam cannons have a more definite bearing on fiber breakage."

Dr. Townend also quotes from other authorities to support his conclusions. In his thesis we find the following quotation from the reports of investigations made by Speakman and Dickenson:

"Humidity does not appear to have an important influence on fiber breakage. . . . Increasing the water content increases the extension at break, thus giving the entangled fibers more opportunity to escape by extension under the action of the card."

The research engineers quoted refer definitely to atmospheric conditions in the card room, the heat applied, and the moisture content of the wool. These three are therefore very important, and we append our own views:

What Heat Does

Heat is necessary for three reasons:

1. To maintain the oil at the desired viscosity for lubrication.
2. To have the working parts of the card at the correct temperature.
3. To aid in the dissipation or neutralization of static electricity, as air at a higher temperature will hold in suspension more grains of moisture per cubic foot than will air at a lower temperature.

What Moisture Does

The moisture content of the wool has a threefold beneficial action upon the fiber. It increases elongation, and hence the fiber will stretch more. This stretching will prevent breakage many times, because the fiber may be liberated before it reaches the breaking point. Second, the surface moisture acts as a lubricant. Finally, the conditions which cause frictional electricity are reduced.

The atmospheric conditions of the room are important because they have a very great influence upon the rate of evaporation of moisture in the stock. A slow yielding up of moisture during the entire process of worsted-yarn manufacture, from the card to the finished yarn, is best for processing. This conclusion was reached by Hartshorne in his exhaustive investigations made many years ago.

When the card sliver enters the combing room in too dry a condition, it is essential that moisture be applied at the first gilling. First, see to it that the combing room has a relative humidity of about 75%. If oil is to be applied, apply it in the form of a thin emulsion and, if possible, apply water direct in the form of a fine spray.

Get the moisture content of the wool up as soon as possible. Carded stock will gill well with 25% moisture. Indeed, the extra moisture is essential when the oil content is low and intersecting gill boxes are used. If the moisture is excessive, waste will collect under the fallers, and droppings will be found under the apron tension roll. The stock follows the apron, and the apron brush rubs the lint into lumps which are detached from the apron by the lint roll; thus much is thrown onto the floor. This same defect is found when the dry stock entering the gill box is sprinkled by hand with water.

When backwashing follows the card, it is possible to apply oil at the gill box and at the same time regulate the drying so that the backwashed card sliver is ideal for processing. Thorough rinsing is necessary at the backwasher. An excess of soap cannot be rinsed out thoroughly. Later this will cause trouble, especially when the resultant top is destined for the French system. It will foul the porcupines and later cause lapping around the small top front carrier rolls in spinning. Insufficient soap action in the first bowl will result in a gummy or "sticky" sliver, a condition which plays havoc with the comb pins. Sometimes the backwasher cannot function properly, due to poor scouring; but this condition should have been detected before carding.

Draft, Tension, and Piecings

With the stock in proper condition, it should be easily possible to obtain a well-gilled sliver, providing that the box is in proper condition, that it has the correct pinning, and that the correct drafts are used. Before the comb, use as much draft and as much tension as the stock will stand. This can always be greater than the draft and the tension used after combing. For fine wools, use as little back draft as possible, but have a good tension on the ends as they enter the feed rolls. Avoid overcrowding of the pins, especially on ordinary gill boxes. Keep the pins well set up and keep the fallers clean.

It is false economy to overcrowd gill boxes and at the same time give the operative more work than he can handle properly. The best way for an overseer to find out whether an operative is overloaded with work is to try to do it himself and to do it thoroughly. Repinning of comb circles or segments, repairing dabbing brushes, and replacing gill-box and comb aprons are expensive items in every combing room. The overloading of gill boxes and the excess work given to gill-box operatives will certainly result in an increase in the previously mentioned items of expense.

Good piecings are essential. Teach every operative how to make good piecings. Have patience with him so long as he makes progress. Do not waste any time with him if he does not make progress, because—it will bear repeating again and again—good piecings are essential to not only good gilling but also perfect combing.

Damaged Fallers

When the operatives clean the fallers, have the fixer or section-hand inspect the fallers, removing damaged ones and replacing with good fallers. Encourage the cooperation of the box minders and comb minders so that many pairs of eyes are constantly on the lookout for defects, and so minimize the amount of defective work produced.

Avoid excess pressure on the aprons or uneven pressure. Test the slivers coming from every box for evenness. Excess draft will be revealed either in faller bars or regularly spaced uneven places, or both. Uneven tension will be detected easily by the following procedure. Stop the gill box. If it is a can gill, seize the end under the press rolls and start the box, running about 2 yd. or less of sliver. Shake this gently and allow it to hang in the form of a curve. If one edge of the sliver hangs below the opposite edge, then the pressure on the top front roll is uneven. Correct the fault by easing the pressure on the side which sags. Excess tension will be revealed if, when the end is twisted, uneven places irregularly spaced are in evidence. Lack of sufficient tension will result in a more or less dull or wavy-looking sliver. Thick and thin places in the sliver may be due to other causes, such as worn aprons, poor piecings (occasional), excessive back draft, wrong ratching, fallers missing, and excessive speed.

Defective Pins

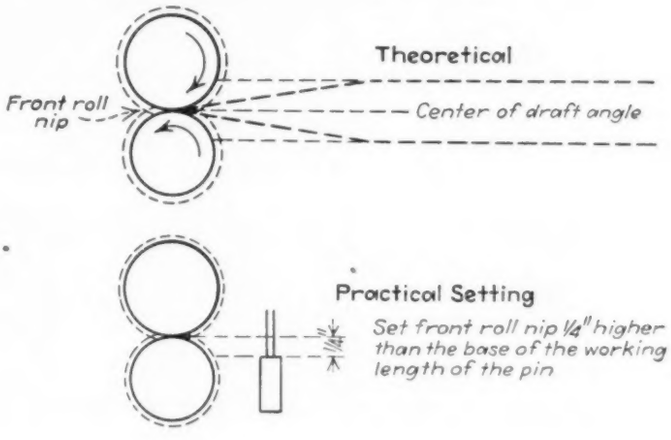
Defective pinning is a constant source of trouble. Hooked pins have a tendency to increase the noil, because fibers which have caught on the hooked pins are taken through the front rolls in the form of loops, instead of being straight. If such pins are numerous, they will have a tendency to break down the stock and form a faller lap. Split pins have a similar effect with the added tendency to hold more fibers in the upper portion of the pins. Broken pins prevent proper penetration, damage fibers, and may prove a fruitful source for the formation of neps.

The setting of the nip of the front rolls for height relative to the faller blade is important. There is only one correct position, and that is with the nip set at the center of the draft angle. Some men follow the ¼-in. rule for both the back and the front rolls, as illustrated by the lower of the accompanying diagrams. On some French gill boxes the correct position of the front-roll nip for various thicknesses (volume) of wool in the fallers is indicated by setting points for the vertical adjustment of the front-roll bearings.

Good gilling before the comb will result in better combing and less noil. It will reduce the costs of combing.

Good gilling after combing will produce a better finished top; and if the same care is exercised when gilling in worsted drawing, there will be an improvement in the yarn and a better spin.

There is no substitute for good gilling.


Theoretical
Front roll nip
Center of draft angle
Practical Setting
Set front roll nip ¼" higher than the base of the working length of the pin

Relation of height of front-roll nip to height of faller blade.

Old Lady Gingham

Spruces up with novelty patterns

By Thomas Nelson

North Carolina State College, Raleigh, N. C.

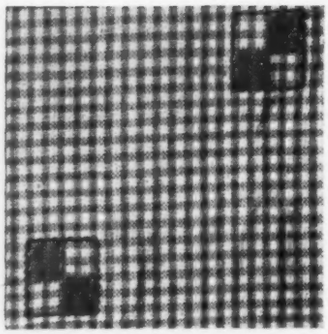


Fig. 1

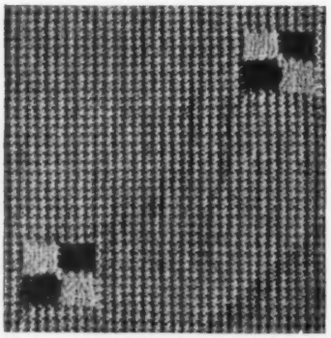


Fig. 2

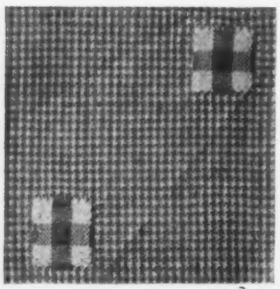


Fig. 5

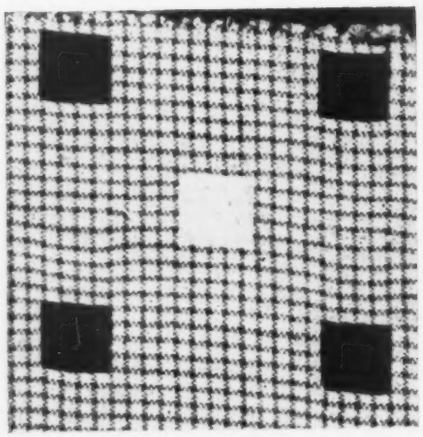


Fig. 6

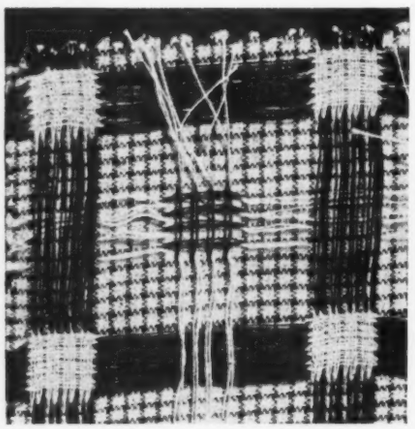


Fig. 7

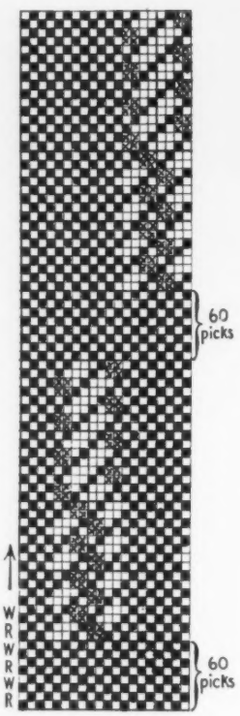


Fig. 3

THE old saying, "Fashion moves in cycles and the cycle comes around about every seven years," was probably true in years gone by, but today the demand is for new fabrics, new styles, new something every year, either in pattern or yarns. That does not mean, however, that many of the old fabrics are not often resurrected, some changed, and others used as a base from which other styles and patterns are developed.

As compared with the amount of plain, common gingham which was made years ago, the production today is negligible; but there seems to be a tendency toward a more general use of fancy ginghams and plaids. A gingham fabric, well constructed, made of good, fast-dyed yarns, and with a good combination of colors, always makes an attractive fabric.

One method of making a fancy gingham is to use the patchwork idea in a fabric. An imported patchwork-gingham fabric is illustrated in Fig. 1. The patchwork squares are made by using extra warp threads and extra filling threads, which form solid blocks of lavender superimposed on an ordinary gingham fabric of four ends and four picks of lavender and four ends and four picks of white. The floats are sheared off after weaving.

A very interesting patchwork-gingham fabric is shown in Fig. 2. Whether suggested by Fig. 1 or original, it shows that old patterns can be used as guides and changes made in weaves to give apparently the same effect. The blocks are constructed on the double-cloth principle. Solid blocks of red and white are superimposed on a gingham fabric of red and white, two ends and two picks of each color. The picks of red interweave with red to form the red block, and the picks of white interweave with white to form the white block. There are no floats to be sheared after weaving.

A drawing-in draft and reed plan to make this fabric are given in Fig. 3. Solid squares represent red threads, and crosses represent white threads. The chain plan is illustrated in Fig. 4. Crosses represent that the harness of one color is raised when the opposite color of filling is weaving with its own color in the face. Another sample of imported, patchwork - gingham fabric is given in Fig. 5. The patchwork consists of a check of ten ends and ten picks of white, ten ends and ten picks of green, ten ends and ten

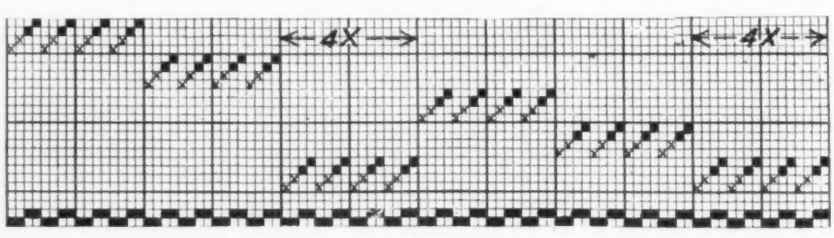


Fig. 4

picks of white, superimposed on a base gingham fabric of two ends and two picks of green and two ends and two picks of white. The floats are sheared.

Following out this idea, Fig. 6 was made, showing solid blocks of white and black. Each block consists of 28 ends and 28 picks on a base gingham pattern of two ends of black and four ends of white, and two picks of black and four picks of white. Fig. 7 shows the opposite side of the fabric with the ends and picks floating between the blocks. The floating ends and picks are cut off on a shearing machine after the fabric is woven.

Another method of ornamentation is by the use of stripes in the warp and an interweaving of warp and filling to make a regular gingham in certain parts of the fabric. An illustration of this is given in Fig. 8, with the reverse side

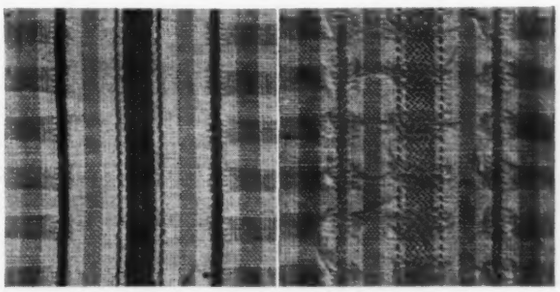


Fig. 8 Fig. 9

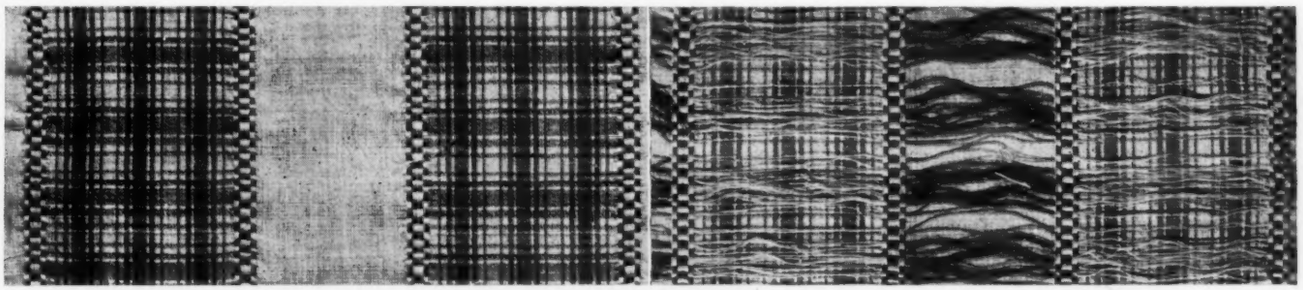
of the fabric shown in Fig. 9. The floating filling has been cut off the back of the fabric. The gingham checks are made with ten ends and ten picks of lavender and ten ends and ten picks of white. The satin stripes are made on four-harness shafts, with lavender threads in which all lavender filling interweaves.

Another illustration of this method is given in Fig. 10. Three repeats of a blue-and-white check gingham are made with a blue-and-white tape-weave stripe on each side of the gingham. A stripe of plain fabric separates the gingham. The reverse side of this fabric as it comes from the loom is shown in Fig. 11.

These illustrations will no doubt suggest other methods and combinations for producing fancy gingham fabrics.

Designers will find that gingham has many possibilities.

Fig. 10 Fig. 11



Redyeing Rayon Fabrics

Practical hints on covering up defects and producing new shades required

By Philip Le Brun

REDYEING of rayon and acetate fabrics involves all the problems encountered in handling new goods, plus the additional ones of removing or covering up defects or undesirable colors. This article deals primarily with the processing of fabrics which have been returned to the dyer because the original shades proved unsalable. In general, the same methods are employed with goods which have to be rehandled because of some defect in the original processing; but, in this case, the material is usually redyed to the original shade.

A great majority of redyes are put into the staple navy and black shades; the rest are put into numerous fancy shades, usually pastels. Unfortunately, bright shades are often requested on tans and other light colors, which tend to sadden the final results unless the goods are stripped before redyeing. In the same way, a reddish blue is often desired on top of a light green or yellow, and *vice versa*. This is one of the reasons why redyeing is a much more difficult task than ordinary dyeing.

Finishing Redyes

Finishing of redyes also offers a number of new problems. Old breaks, due to the original processing, plus any new breaks caused in the redyeing, must be removed. Acetate fabrics often exhibit shiny stains due to some fault in the original processing, and for which the cloth is sent to be redyed. If these marks were caused by contact with a hot metal, they will be practically impossible to remove, although, addition of dullers, such as titanium oxide or lampblack, to the size mixture will tend to cover the marks to some extent. Again, redyed fabrics often lack the elasticity of new goods, so that it is rather difficult to obtain as narrow a finished width as is sometimes requested.

All of these facts do not interest the customer, who usually expects the redyed goods to be no different in any respect from new goods originally dyed to the redyed shade. This results in an unfortunate situation for the dyer, who is often faced with an impossible task. It is true that redyes are done at customers' risk. Even so, many unjustified claims are paid, in order to retain the good will of the customer.

Cloth for redyeing should be inspected for defects before any rehandling is done. Any flagrant defects such as holes, bad

streaks, grease spots, etc., should be marked. If the piece is in too bad a condition to make a salable article, the cloth should not be processed. If the original color is too deep to allow the desired shade to be obtained by redyeing on top of the original dyeing, a small sample should be tested before rehandling the entire piece. In most cases, rayons will strip white, whereas it is not so easy to strip down acetates enough to permit a lighter or a complementary color to be dyed on top of the old color. Bleached goods and pastel shades often have defects which do not show up until the cloth is dyed into a darker color. These defects then appear, usually as light-colored blotches or as dark spots with a surrounding halo. Redyeing very slowly with as little salt as possible helps, but does not completely overcome this condition.

All the original finishing materials on the fabric should be removed before rehandling. A scour in a weak ammonia bath at 185° F. will usually suffice.

Methods of Stripping

Various methods of stripping are used. For rayon, a simple soap scour containing about 1 qt. of ammonia to 200 gal. of the solution will often remove enough of the dye to permit redyeing into another color. It is sometimes necessary to repeat the scour in order to obtain a sufficiently light color for redyeing. A more drastic strip is obtained by use of an alkaline hydrosulphite bath. The latter is more effective than a neutral hydrosulphite, probably because the latter is so much less stable. About 1 lb. of sodium hydrosulphite and 1 lb. of 26° Bé. ammonia to 200 gal. of water is an effective concentration for most uses. The cloth is entered at 140 to 160° F., and the bath is raised to a boil (185° F. for acetates) in 20 min. This temperature is maintained until the cloth is light enough, unless the color of the bath shows that the hydrosulphite is completely decomposed. This is recognized by a color change in the liquor from a clear light yellow to a darker, usually cloudy, color. In such cases, an addition of 50% of the original amount of hydrosulphite may be necessary to obtain the desired results.

Sodium formaldehyde hydrosulphite and zinc formaldehyde hydrosulphite are used in the same way. The latter compounds are more stable and can be added to the liquor at high temperatures without the danger of rapid decomposition. Small additions of acid, either formic or acetic, are often required to obtain the best results from the formaldehyde compounds.

Acetate fabrics are stripped by the preceding methods at somewhat lower temperatures or by using a soap and ammonia scour at 185 to 190° F. As stated before, most acetate dyes will not strip as readily as will the direct colors used on viscose.

Only dyes which are known to level easily should be used for redyeing. Some of the new wetting and penetrating agents, such as the fatty alcohol sulphates, are a big help in overcoming any tendencies to streak. Pine oil preparations are also of value for this purpose. Another excellent leveling and penetrating assistant which is often overlooked is pyridine; this chemical is used in the concentration of 1 qt. to 200 gal.

Precautions in Dyeing

Glauber salt should be used in as small a quantity as is possible. No salt should be added until the fabric has run 30 min. at the proper dyeing temperature—180 to 200° F., depending on the fabric. The salt is then added slowly over a period of 15 min. The temperature is brought up slowly so that 30 to 45 min. is required to bring the bath up to its maximum temperature. After dyeing to shade, a short, warm rinse at 90° F. and two cold rinses complete the process. It is needless to stress the importance of having soft water for the dyebath.

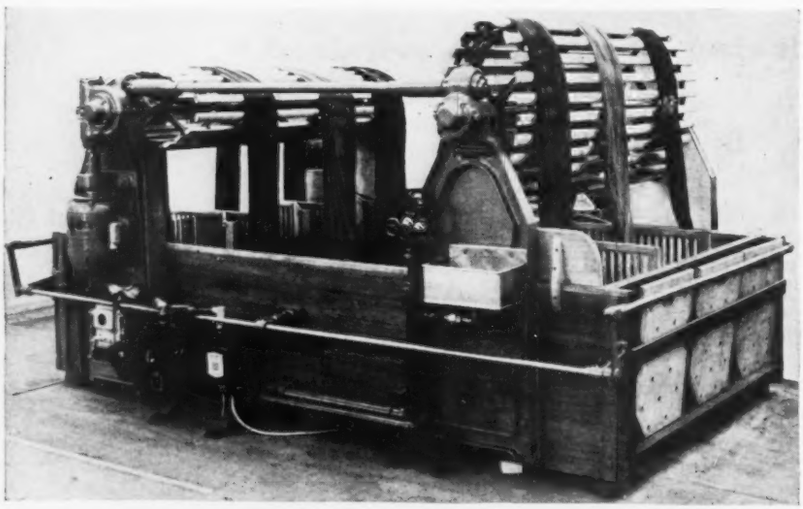
It is best not to centrifuge the fabric too hard after dyeing. Over-extracting results in sharp, hard creases which are difficult to remove. Full-width vacuum extraction or even squeezing on a two-roll mangle are preferable in most cases to the usual hydro-extracting.

Finishing is carried out in nearly the same manner as for new goods. Most stretching frames are equipped with small steel cans on the delivery end. These are made so that they can be steam heated. The writer has found that use of these cans is a quick and safe way for removing most of the bad breaks frequently encountered in redyed goods. The cloth, after extracting, and while still damp, is run through the frame, being so threaded that the back of the fabric is in contact with the hot can. As little tension as possible is used, both against the can and while batching up. The steaming cloth is kept on a shell without unrolling for 15 to 30 min. The fabric is then dried. After this treatment, it will be found that most of the wrinkles have disappeared and that the cloth does not show any abnormal sheen due to the hot can. In fact, the effect is very much like that produced by the use of a decatizing machine.

Size Mixture

An effective size mixture for fabrics which require softening consists of 1 qt. of 26° Bé. ammonia, 6 qts. of sulphonated olive oil, and 1 qt. of glycerin to 50 gal. of water. The fabric is sized on a two-roll mangle and is run directly into a crepe dryer or a loop dryer. The cloth should be fully dried in the dryer. Damp or wet places in the fabric will always sag or stretch excessively on the frame. This makes an uneven cloth with flat and crepy sections and other undesirable properties.

Fabrics which are quite wide after redyeing, due to lack of elasticity, can often be reclaimed or at least greatly improved as to the final appearance. The dry cloth is first sized on a two-roll mangle. It is then run directly into a dry box and is taken off into a basket. This permits the maximum shrinkage both lengthwise and widthwise. (Cloth batched up on a shell always has a certain amount of tension regardless of how carefully it is tended.) The fabric is finally fed from the basket onto the frame. This procedure results in as crepy a piece of goods as is possible under the circumstances.



IN HANDLING redyes the author suggests numerous ways of overcoming common difficulties and faults. The customer expects the redyes to be identical with new goods dyed to the redyed shade and the dyer thus often faces an almost impossible task. Details here given help in a close approach to the customer's expectations.

Japanese Finishers

Are pioneering in use of electrically heated equipment

By Herbert Leopold

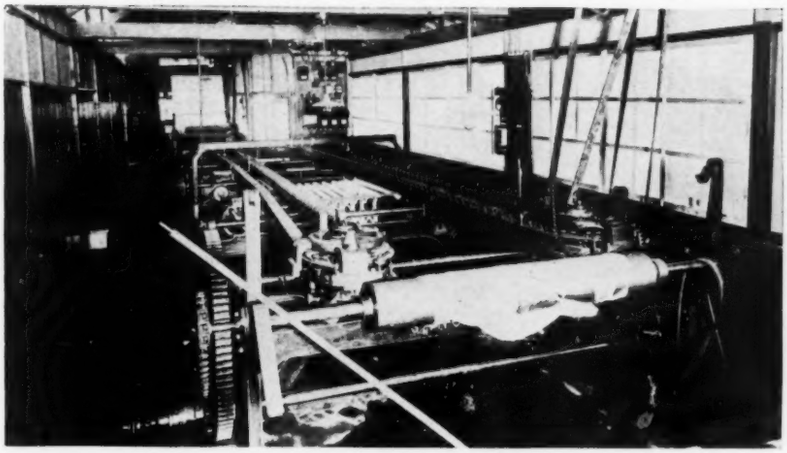


Fig. 1. Electrically heated tenter

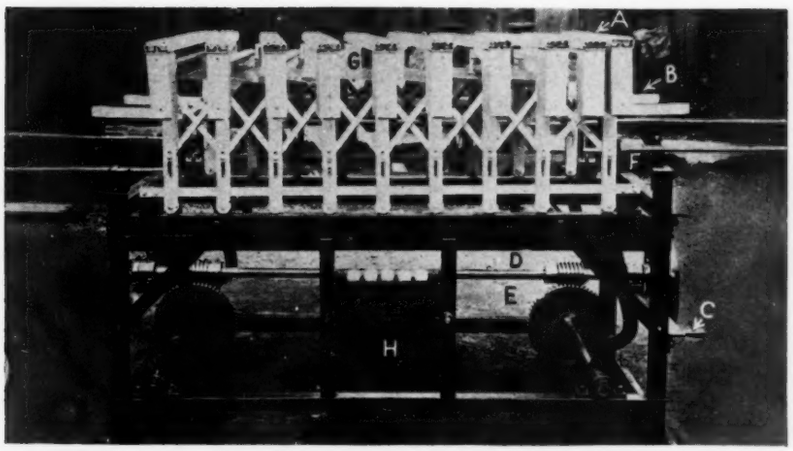


Fig. 2. Heating unit for tenter

Fig. 3. Induction-type drying cans

IN the last few years Japanese finishers have made noteworthy progress in the use of electrically heated equipment of various types. As far back as 1918, one of the Kyoto dyehouses installed an electrically heated tenter. After a four-year experimental period, during which the machine was constantly improved, the tenter was put in commercial operation. The original model is still in use, although it has undergone further modification and refinements. Following the introduction of the tenter, other types of electrically heated equipment have been developed and put into operation in a number of finishing plants in Japan. Some of the more interesting of these are described and illustrated in this article.

An illustration of the tenter is shown in Fig. 1, and a close-up of the electric heating unit is given in Fig. 2. The heating unit is adjustable to different widths of cloth and is provided with a mechanism which closes a shutter partition and simultaneously lowers the heating element in case the tenter stops, thereby preventing charring or burning of the cloth. In Fig. 2, *A* is the heating element; *B*, the adjusting link for changing the width of the heater; *C*, a handle; *D* and *E*, worm gears for raising and lowering the heater; *F*, a terminal box; *G*, a reflector of nickel-plated sheet metal; and *H*, a voltage regulator.

In Fig. 3, is shown an induction-type 16-cylinder can dryer constructed under Japanese patent No. 40,856. Since the iron cylinders of the dryer are themselves the heat generators, and at the same time are the drying surfaces, the action is direct. This design takes advantage of the comparatively high temperature coefficient of the resistance of iron. The latest type of equipment consists of two cylindrical drums of different diameters mounted concentrically. The inside drum carries the primary current. The outside, non-laminated, iron drum forms a one-turn, short-circuited winding in which secondary cur-

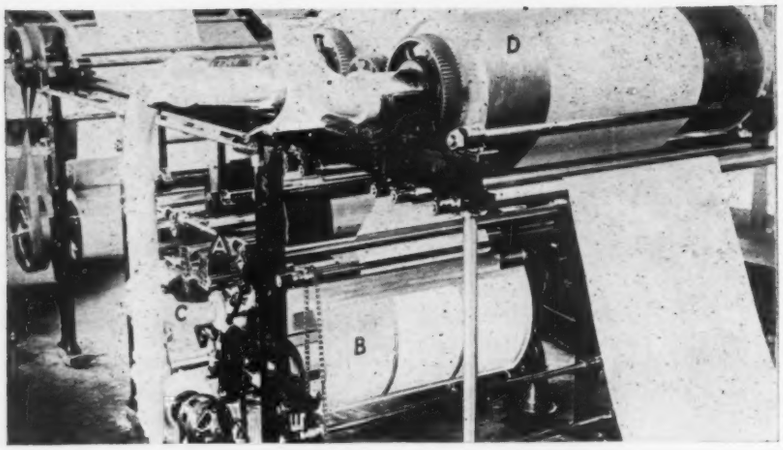


Fig. 4. Electric singeing machine

rent is induced. The total of the energy passing into the hysteresis and eddy-current losses is converted into heat.

Electric singeing machines which gave satisfactory results were first developed in 1927. Since then, this type of equipment has been considerably improved. Two Japanese patents covering electric singers are Nos. 77,469 and 78,689 . One of the most recently developed singers is illustrated in Fig. 4, in which *A* is the terminal of the heating element; *B*, an automatic shutter which acts as a safety device to prevent burning of the cloth if the machine stops; *C*, a suction pipe connected with an exhaust tank where gas produced during the singeing process is stored; and *D*, a drum for preheating the cloth by use of that gas. Singers of this type have been installed in such up-to-date finishing plants as Kanegafuchi, Nippon Toyo, etc. A heating element of modern design is shown in Fig. 5. The salient feature of this device is that the rheostat is made of a special nickel-chromium alloy, which is connected alternately from each side. Sufficient heat to give satisfactory singeing is obtained when current is passed through the resistor.

Electrically heated schreiner rolls are also being used in Japan. A sketch of such a roll, made according to Japanese patent No. 43,109, is shown in Fig. 6. In Fig. 6, *A* is a slip ring; *B*, a schreiner roll; *C*, a heat insulator; *D* and D[1], a sheathed-wire heater; and *E*, a fusible alloy which melts at a temperature of about 300° C. The slip ring through which the current is conducted to the heating element rotates with the roll. With this type of calender roll, the heat is well distributed and the thermal efficiency is high.

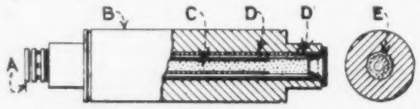


Fig. 6. Electrically heated schreiner roll

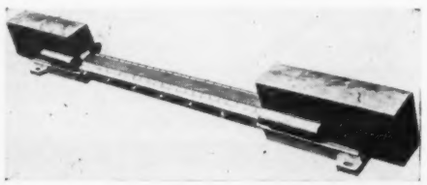


Fig. 5. Heating unit for singer

Cotton-Fiber Strength by modified flat-bundle test

By Mary Anna Grimes

Texas Agricultural Experiment Station

A FLAT BUNDLE test for determining the tensile strength of rayon and silk fibers was first advocated in a paper presented before Committee D-13, at Providence in 1935 (TEXTILE WORLD, April, 1935). Miss Grimes here discusses briefly the successful modification of the test for use on cotton fibers.[1]

A MODIFICATION of the flat-bundle method, as suggested by Crowley[2] for use with rayon and silk, has been found satisfactory for determining the breaking strength of cotton fibers. It has the advantages over the Chandler bundle method of eliminating the wrapping device and special jaws and the saving of considerable time and energy with as satisfactory results.

A bundle of cotton is combed until the fibers are parallel, cut to a definite length, weighed, taped with drafting tape, and broken in a fabric-breaking-strength machine. The cutting and taping are made easy by the use of a gage composed of two strips of celluloid, ½ in. wide and approximately 3 in. long, hinged with adhesive tape. The combed fibers are placed—as uniformly distributed as possible—on one side of the gage so as to extend between marks placed ¾ in. apart, as shown in Fig. 1.

The other half of the gage is turned over the cotton, the gage held firmly, and the ends of the fibers cut off with sharp scissors. The gage and cotton are weighed, the weight of the cotton being kept at approximately 0.025 ± 0.005 grams. The gage is opened and two strips of 1-in. drafting tape are placed across the cotton and lengthwise of the gage, the tape meeting in the center of the cotton and of the gage, as shown in Fig. 2. The tape is lifted with the cotton adhering to it, turned, and folded to cover the other side of the bundle.

The prepared bundle is placed between 2-in. fabric jaws in a breaking-strength machine, with the edges of the jaws touching and the outside edge of the tape and jaws coinciding; and the bundle is broken. No slippage occurs within the jaws, and the bundle breaks quickly and sharply, although there is greater elongation than in the Chandler bundle. The strength, in pounds per gram of cotton of this length, may be calculated by dividing the machine break by the weight of the cotton; or, if preferred, the strength per cross-sectional area may be calculated. The fibers may be left uncut and the length from fiber arrays used; or, if less accurate results are satisfactory, the cotton classer's estimate of the length may be used.

Fig. 1. Arrangement of fibers before closing gage, cutting fibers, weighing, and taping.

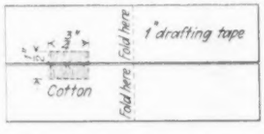
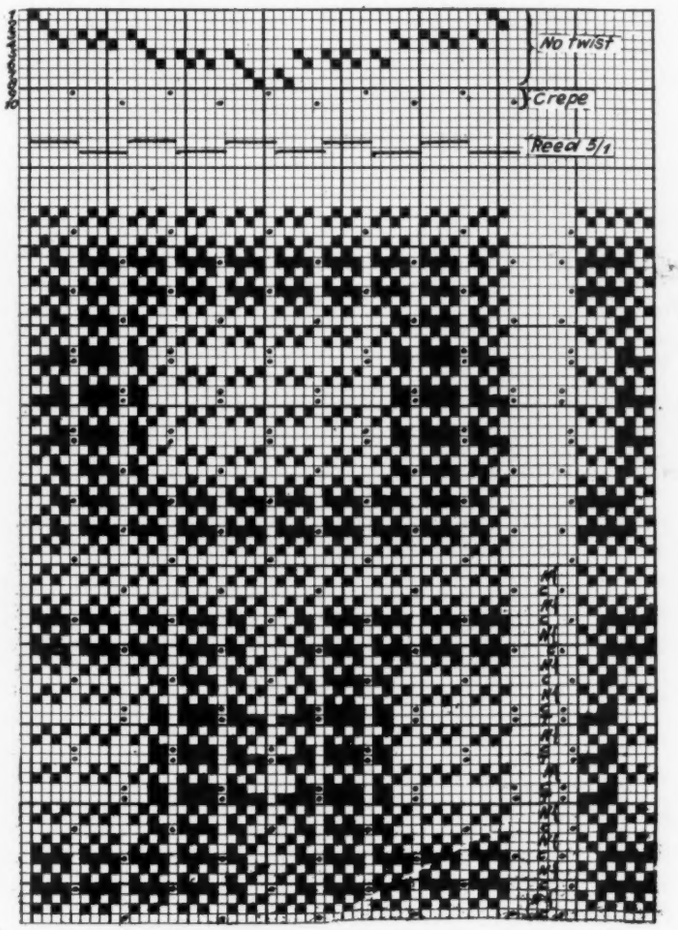


Fig. 2. Taping of cotton fibers after cutting and weighing.

[1] A more detailed discussion by Miss Grimes is contained in the January issue of *Textile Research*, published by U. S. Institute for Textile Research, 65 Franklin St., Boston. Publication here is approved by director of Texas Agricultural Experiment Station, College Station, Texas, as Technical Contribution No. 370.

[2] Crowley, Guy F., "A.S.T.M. Standards on Textile Materials, 1935," page 234.

Matelassé Variations



Special grouping of harness entry facilitates weaving of large repeats

By S. C. Veney

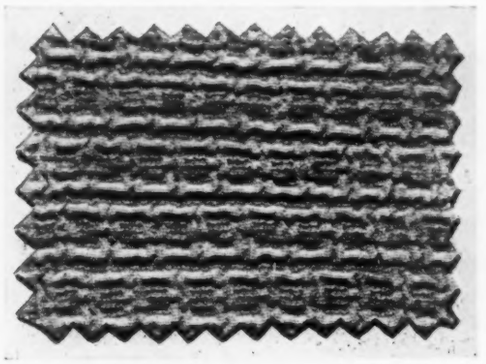


Fig. 6. (at left) Pattern repeat, 72 picks; box repeat, 36 picks. 45 in. in reed. Reeded 35/5/1 —4/1 acetate 100-den. and 1/1 crepe 100-den. 50/55 turns. 76 picks of 100-den. acetate, 100-den. crepe, and 17/18 tinsel shot pick-and-pick. Entered 8 shafts acetate from bottom beam and 2 shafts crepe from top beam.

Fig. 7. (above) Fabric woven from Fig. 6.

WHERE a straight entry would give a matelassé figure having a width of only .4 in., a special grouping of ends can be used to extend the width to 1.2 in., Mr. Veney explains in this second and concluding instalment.

IN ORDER to be able to weave certain large repeats of matelassés, particularly two-beam constructions, it is sometimes necessary to make a special arrangement of the harness entry in groups, such groups consisting of two or more ends all entered on the same shaft. This is in contradiction to other group entries having a series of ends on two consecutive shafts so as to weave taffeta. The reason for selecting such a layout is the following:

Assume that we have twenty shafts available, of which two are used for edges, leaving eighteen for the weave. As the figure is formed by the warp crepe, two more shafts have to be deducted for the no-twist warp, which is weaving plain taffeta. The warp layout calls for two acetate and one crepe alternately, with the three ends per dent in a 40 reed; figure width 1 in.

Entering the crepe straight through on sixteen shafts would result in a pattern repeat of only 48 ends (16 times 3), equal to .4 in., or less than one-half of the desired size. By entering six crepe ends in groups on two shafts (first six ends on shafts 1 and 2, second six on shafts three and four) we can increase the repeat over 72 ends (24 times 3). This, however, is still too small, since the figure should extend over 120 or more ends. Such an entry also limits the flexibility of stepping off the figure, as only eight separate groups of two shafts each can be formed on sixteen harnesses.

The entry shown at Fig. 5, however, will help to solve this problem. We attain sixteen separate groups which can be controlled independently over a repeat distance of 1.2 in. (144 ends). Naturally, broken groups, reverses, and point systems can be combined by using the same arrangement of ends as shown. The ground between figures can be woven in a very attractive short crepe float in the warp which will set off the matelassé beautifully. The length of the float is of course controlled by the box chain, and it is longer when a four-pick-acetate, two-crepe order is used than when a pick-and-pick, two-acetate, one-crepe shuttle sequence is employed. A new two-beam three-shuttle pick-and-pick matelassé is shown at Fig. 6, with fabric at Fig. 7.

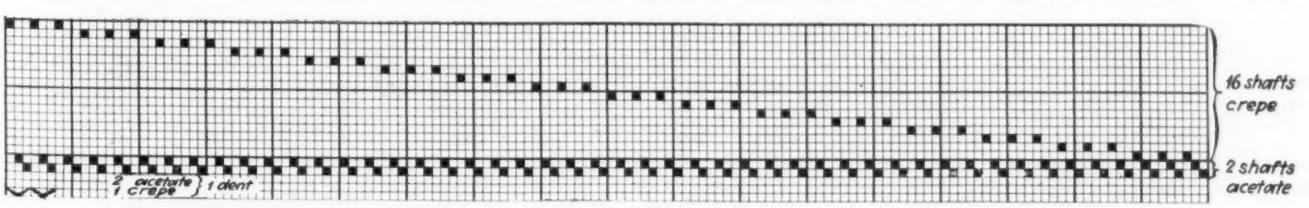


Fig. 5. Entry for two-beam, two-shuttle matelassé. Pattern repeat, 144 ends.

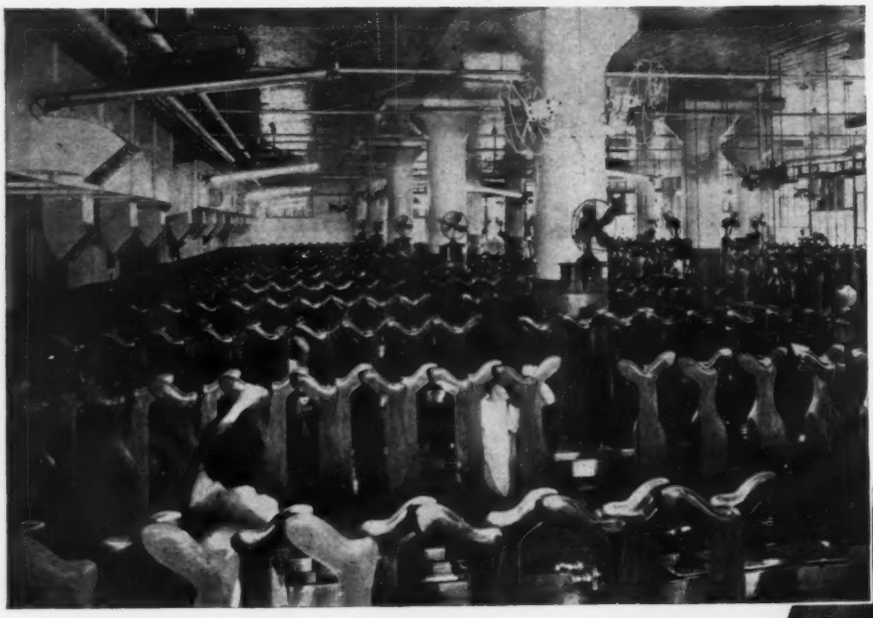


Fig. 1. Rapid air change and evaporation keep forming room cool.

Comfort and Efficiency

Objects of atmospheric control in Apex Hosiery

boarding room, wareroom, dyehouse, and office

WHILE many homes, offices, restaurants, and theaters are being air-conditioned today to make living or working conditions comfortable, few textile mills are air-conditioned with that object in view. The mill atmosphere is usually given consideration just because the fibers and yarns are demanding water, and any comfort which the worker gets out of the improvement is quite incidental. But in one of the largest full-fashioned plants in the world—that of the Apex Hosiery Mills, Philadelphia—things are different. Apex controls the atmosphere in its forming or boarding room, in its wareroom (where pairing, folding, labeling, stamping, and boxing take place), in its dyehouse, and in its offices. In each case the purpose is mainly to improve working conditions.

F. Elwood Struve, general manager of Apex, contends that a mill which devotes care and attention to only its machines and materials is making a mistake. The employee, he feels, is at least as important as either of the other items and should be given conditions conducive to his or her comfort and efficiency.

Installation Has Justified Self

This unique installation was made in 1935 by the Carrier Corp., Newark, N. J.; and it has now had sufficient time to justify itself. This it has done in many ways—most of them expected, but some quite unexpected. The proof that comfort has been attained lies in the fact that absences have been reduced throughout the year—in summer because the mill is a pleasant place in which to spend one's time, in winter because colds and related sicknesses are less common. The improved attendance is in itself an indication that morale, and hence efficiency, has been improved.

Color shades are being maintained more uniformly, because in the dyehouse, where fog has been eliminated, a man can now see just how much dye he is feeding and can read his thermometers and gages without difficulty. In the dyehouse also, where formerly a man could not see his hand before his face on occasion, there is now less danger of accidents. Again, there is far less corrosion of equipment. Motors, conduit, switch handles, and other items, some of which formerly required replacement every third year, look about as good as they did two years ago. Furthermore, there is less danger of goods being stained by condensation dripping from the ceiling.

In the forming room the hosiery is being more uniformly, accurately and speedily boarded, without the splitting of wales. In both the forming and warerooms less hosiery is being soiled by perspiring hands. Inspectors are more alert; and, although this means the discovery of more seconds, the loss is more than made up by the reduction in returns and by the maintenance of the mill's reputation for high quality.

Of great importance to the wareroom and to the other departments as well, is the fact that the mill is cleaner. Win-

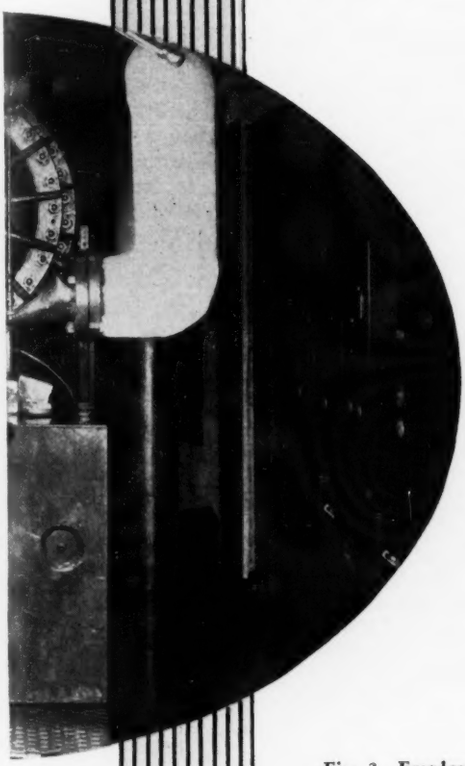


Fig. 2. Refrigerating apparatus for ware department and offices.

dows are kept shut throughout the year; and the dust and dirt which used to blow in from Philadelphia's junk yards, railroads, incinerators, and streets is kept outside. Mill-cleaning costs are reduced. Street noises are also largely eliminated. Pairing is more correctly done; and, in these days when buyers expect neat packages, the twelve operations required to fold and box every three pairs of hose are conducted more accurately and with greater dispatch. There is more pep and good nature in the offices also; and it is reported that conferences are more productive of new ideas and of their careful consideration.

The type and amount of atmospheric control is not the same in each department. In the forming room, for example, it consists only of the application of evaporative cooling with the proper distribution of air so that the air heated by the hot-water and steam drying forms is displaced by cooler air. The entering ducts may be seen in the upper left-hand corner of Fig. 1, and an exhaust fan for discharging the heated air out of doors is visible in the window at the right. The air distribution is such that, although there is a very rapid air change, no worker is in an appreciable draft and the finished hosiery is in no danger of being blown about.

All of the central conditioning apparatus is contained in a small building in a corner of the yard. (See Fig. 2.) The equipment for supplying the forming room includes an air washer for the evaporative cooling effect, together with a filter to insure a supply of clean air. During the winter months the use of the washer is discontinued and only filtered air is supplied, the amount being limited first by means of a two-speed motor and second by means of a volume damper, as obviously the full amount of air supplied in the summer is not needed during the cold weather. In summer it is possible to reduce the temperature 10 degrees below that of the outside air.

FOLLOWING *is a detailed listing of the equipment:*

Refrigeration—*one 99.7-ton machine, 100-hp. variable-speed motor, 1,750-6,400 r.p.m.*

Main-building air-conditioning—*one fan, 2,100 c.f.m., 10-hp. motor, 1,750 r.p.m., constant speed. Fan No. 2, 13,000 c.f.m., 7½-hp. motor, 1,750 r.p.m., constant speed. Dehumidifier, 31,200 c.f.m. Pump, 342 g.p.m., 20-hp. motor, 1,750 r.p.m.*

Boarding room—*fan, 25,867 c.f.m., 15-hp. motor, two speeds. Air washer, 28,000 c.f.m. Pump, 7½-hp., 1,750 r.p.m.*

Dyehouse—*"Weathermaker," 10,380 c.f.m., 5-hp. motor, 1,750 r.p.m.*

Refrigeration for Wareroom

Because of the great amount of heat in the forming room, refrigeration was considered too expensive to apply; but refrigeration was applied to the ware department, shown in Fig. 3, and to the offices. The dyehouse is supplied with only warm, dry air to dispel fog.

Since, naturally, the mill was already supplied with a heating system, all that was required of the new installation in the way of heating was provision for raising the temperature of the incoming air to that of the room. A certain amount of outside air is drawn into the system constantly, even in winter.

Mr. Struve sums up the satisfaction which the new installation has given in the following words: "If we were building a new mill, we are now convinced that we would air-condition it throughout."

Fig. 3. Employees find this wareroom comfortable the year round.

When power-plant reports talk dollars-and-cents, executives will

Listen to the Engineer

By Stuart W. Allen

HEAT, light, and power costs are seldom analyzed so closely as are direct manufacturing costs in the textile mill. This is a mistake on the parts of both the executive and the power-plant engineer, since relatively little study and a minimum expenditure in the right direction often would effect remarkable economies in operating costs of the plant.

The average executive feels that all that is possible is being done to insure economic operation of the power plant when a competent practical operating engineer is in charge. Yet when this engineer asks for appropriations to modernize the power plant, his requests are frequently turned down. One reason is that the primary interest of textile mill executives is necessarily in production problems. Power plants have a way of keeping on the job twenty-four hours a day, and the executives do not have to worry much about them. The second reason is that the engineer, not being an accountant, usually has only meager cost data on which to base his recommendations.

Boiler Efficiency

Too often power-plant records and data refer to boiler efficiency, B.t.u. per kw. developed, and other terms which are significant to the engineer, but have little meaning to the financial department. It is only by the correct determination, tabulation, and interpretation of data that really efficient and economical management can be obtained. A difference of ½ to 1% in boiler efficiency reported may mean little to the financial department. But in any plant which uses a quantity of steam or generates considerable power, a slight variation in efficiency makes a big difference in fuel costs. Power-plant records which are to be submitted to the management should include figures showing just what boiler efficiency means in dollars and cents. For example, in the discussion of proposed appropriations for power-plant development, it would often be better if the physical condition of the equipment were left out of the picture entirely, and the net dollars-and-cents savings possible over a period of years be given sole consideration.

The cost of operating the power plant is higher than that for many of the other departments of the mill; in finishing plants, particularly, power-plant costs are in the upper brackets, being exceeded, as a rule, only by dyehouse and finishing department costs. Furthermore, there is usually no other department where savings can be made more readily than in the power plant. If the executives can be made to realize these two facts, they will take a greater interest in the power plant and will be more willing to lend an ear when the engineer makes his recommendations for power-plant improvements. Following are a few examples of how power plant costs often can be reduced.

Savings Made

One point of loss often overlooked is in plants generating steam at low or moderate pressures for process work, but purchasing considerable quantities of outside power. This may, of course, be the most economical procedure; but, in some instances, at least, considerable economies can be effected by the installation of modern high-pressure equipment capable of producing the total electric-power requirements. Although such a change might require the junking of perfectly good equipment, it is possible that it would yield a better return on the investment than similar expenditures in other portions of the plant. For instance, in one mill, the average yearly bill for purchased current amounted to about $20,000. Fixed charges at 13% on the necessary changes and additions, plus added operating expenses, totaled approximately $10,000 a year. Results were an annual net saving of $10,000.

While the foregoing is an example of how large amounts of money have been saved through power-plant development, it is by no means the only or most common method by which savings can be effected. It merely illustrates how thousands of dollars yearly are sometimes literally thrown away, while the management is bending all its efforts to effect savings in the production departments. This is perhaps best shown by the experience of a small textile plant which discovered that its steam costs were considerably higher than those of a neighboring plant as a result of a recent study of its boiler-house figures. Consultation with an engineering firm disclosed the fact that a fuel saving of approximately $1,600 a year could be effected by investing $800 for equipment designed to maintain reasonably constant boiler efficiencies over the widely fluctuating loads encountered.

Plugging Leaks

Plugging of unnecessary leaks does not necessarily mean that large expenditures are demanded. It may mean merely a slight change in operating procedure, perhaps only the exercising of care by the operating personnel to insure correct damper settings under varying load conditions to maintain proper CO_2.

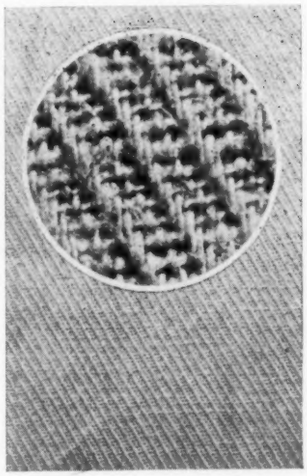
Another factor which proper study of the records occasionally brings to light is that of the effect of changing conditions. Plant processes change with changed demands for goods, and, as a consequence, the demands for steam and power likewise change. A plant with a perfect heat balance ten years ago may find that today it is generating power with condensing turbines and bleeding steam from high-pressure lines for process purposes with a considerable waste in fuel. Or perhaps, where previously the process-steam demands were such that power could be generated as a byproduct, conditions may now be such that condensing equipment is advisable, or possibly a connection with the public utility is the most economical solution. Of course, it is rare that conditions are as glaring as cited here or that possible savings are as great, but the point is that the management should be continually advised by proper records to insure against avoidable losses.

It would seem good judgment, therefore, for management to ask itself these questions: What proportion of our operating expense is borne by the power department? Do we have complete records covering the break-down of cost in this department? Do we thoroughly understand the operation of this department and give a fair proportion of our time to its problems? And last, but of utmost importance, do we make full use of our records and keep this department as up-to-date as we do the remainder of the plant?

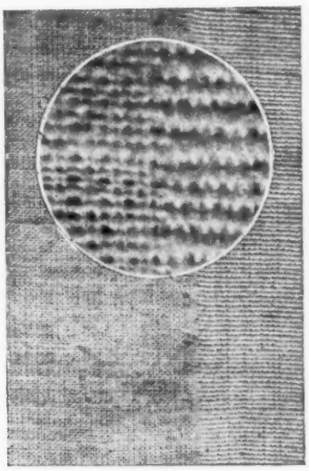
Staple Cotton Fabrics

By John Hoye
Iselin-Jefferson Co., New York

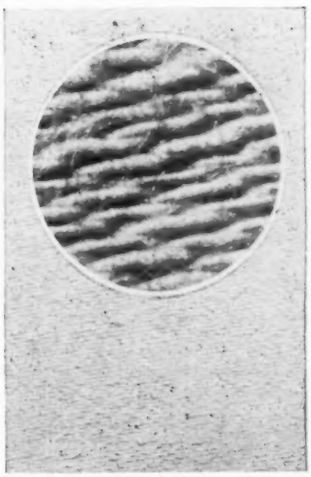
IN this, the thirteenth, instalment of his series, Mr. Hoye completes his discussion of twills and goes on to shantungs and umbrella cloths.



6 - Harness Reinforced Twill 39", 100x64, 4.25 yd. (Finished Sample)

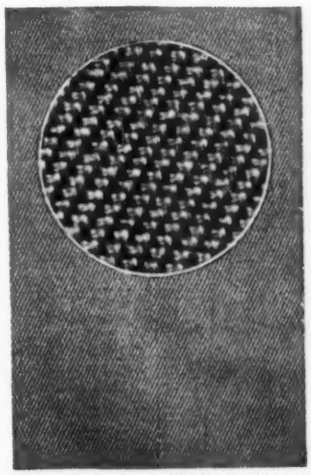


Umbrella Cloth (Carded) 26", 68x72, 6.40 yd., carded



Deering Milliken Co.

5 - Harness Moleskin 34½", 64x112, 1.65 yd.



W. Harris Thurston

Fine-Yarn Twill (Byrd Cloth). About 300 plied yarns per sq. in.

MOLESKINS

MOLESKINS are heavy, filling-face cloths, with a very low-angle twill running to the right. Standard moleskin twills, being similar in appearance and count to filling sateens, are often referred to as such. Although usually made with a twill weave, the moleskin is also made at times with a sateen weave, usually five or seven harnesses, in single or ply yarns. In weaving moleskin twills, every two warp threads are laid together and woven as one with each filling. The first pick is interlaced with first and second warp ends and then floats over six or eight ends to complete the repeat. The second pick is interlaced with the third and fourth ends, etc.

This arrangement of weaving the warp ends in pairs instead of single means that there are fewer intersections, permits a much higher construction than would otherwise be possible, and also reduces the angle of the twill.

Moleskins are made with very high pickage, often having almost twice as many picks as ends. This fact, together with the long, smooth float used, helps to give a lustrous finish or, when intended for suede finishes, gives a compact and dense nap. They are usually made with five harnesses and are referred to as one-up, four-down twills. Carded yarns are always used, the warp usually being coarser than the filling.

Finishes used: Usually sulphur dyed and napped on back; aniline black, resist printed, napped on back for trouserings; sulphur dyed, napped, and sheared down to a suede finish.

Uses in finished state: Sheepskin-lined coats, men's outdoor shirts, windbreakers, suede jackets, men's trouserings, sportswear.

Warp yarns: 12s to 14s.

Filling yarns: 14s. to 16s.

Examples of moleskins:

34½"	68x112	2.00	34½"	64x112	1.65
40"	60x116	1.43	40"	60x98	1.62
34"	60x116	1.68	56"	54x72	.96
40"	50x142	.95	seven-harness filling sateens (ply warp)		

REINFORCED TWILLS

REINFORCED TWILLS are combinations of a regular twill and a plain weave. They are usually a six-harness, warp-face cloth, made with a four-harness warp-face twill, with a two-harness plain weave in between each repeat of the twill. The plain weave reinforces the twill weave, adding strength to the cloth and giving it a more distinctive twill effect than the ordinary four-harness twill. It is not strictly a staple cloth but is used occasionally for dress goods.

Finishes used: Usually mercerized.

Example: 39", 100x64, 4.25 yd.

FINE-YARN, HIGH-COUNT TWILLS

FINE - YARN, HIGH - COUNT LIGHTWEIGHT TWILLS are unusually dense in structure. Because of this texture they are wind-proof, although porous enough to permit the circulation of air, and they are also water-

repellent when finished. The finest qualities are made of plied combed yarns, spun from Pima cotton, in both warp and filling. The construction is exceptionally high and some of the better qualities have as many as 300 plied yarns to the square inch. The weights vary from 3 to 6 oz. per square yard and the yarns range from 40/2 to 80/2, combed. Although light in weight, the cloth is strong, because ply yarns are used; and at the same time it is soft and supple. The twill-line effect is extremely fine and is reversible.

The best quality of this type of fabric was developed originally for use as an outer covering for clothing to be worn in the Arctic or Antarctic regions. Dyed in bright colors, it has also found a place in winter sports clothing.

Finishes used: Usually mercerized; bleached or dyed with vat colors.

Uses in finished state: Parkas, shirts, trousers, ski suits, mittens, gaiters, tents, raincoats, and jackets.

FRENCH-BACK SERGE TWILLS

FRENCH-BACK SERGE TWILLS are heavy cotton twills similar in appearance to worsted serge of the same weave. In the construction of this type of cloth, two warps are used with one filling. One of the warps is woven to form a 2/2 serge twill for the face, and the other is woven with a long-float, low-angle twill along the back of the cloth. The use of two warps gives the cloth a weight and bulk that would not be obtained with one warp and one filling. The serge face is sometimes varied by a stripe or check effect. These twills are usually woven with twelve harnesses or more, and the yarns are carded and usually plied. Other qualities are made with ply warp yarns and single filling, also with all single yarns.

Finishes used: Usually dyed fast black or navy blue; resist printed and then dyed aniline black to secure white line-stripe or check effects; bleached and dyed cream; given as "wooly" a hand as possible in finishing.

Uses in finished state: Men's and boys' trousers, suits.

Warp yarns: 20/2 to 26/2

Filling yarns: 12/1 to 16/1

Examples of French-back serge twills:

38″	96x52	1.64	two-ply yarns, warp and filling
38″	92x54	1.75	two-ply yarns, warp and filling
38″	96x52	1.64	two-ply warp, single filling
37½″	84x48	1.64	two-ply warp, single filling
38½″	80x52	2.28	single yarns

COTTON SHANTUNG

COTTON SHANTUNGS have an irregular rib effect, usually in the filling only, which is formed by using irregularly spun yarn; and they simulate silk shantungs. The yarn has thick places throughout, which produce an uneven effect, and is known as slub yarn. Such yarns can also be used in both warp and filling. The weave is usually plain. Variations of the shantung effect can be formed by a dobby weave in which three or more picks are woven as one to produce both a shantung and a rep effect.

Cotton shantungs are made with ply warps or with single warps, of carded or combed yarns. These cloths are made in weights suitable for dress goods, as well as in heavier weights for suitings. The shantung effect is also employed in broadcloths, osnaburgs, etc.

Finishes used: Usually bleached, dyed, or printed, in mercerized and chased, or plain finishes; also preshrunk.

Uses in finished state: Summer dresses, gowns, men's summer suitings, trouserings (heavier weights).

Examples of cotton shantungs:

37″	54x37	3.50	combed ply warp, single filling
37″	52x36	3.31	combed ply warp, single filling
37″	54x37	3.50	carded single yarns
37″	60x40	3.35	carded single yarns
37″	80x30	2.35	carded single yarns (suiting)
37½″	80x33	2.50	carded single yarns (suiting)

Warp yarn: 30/2 or 15/1

Filling yarns: 12/1 to 16/1

UMBRELLA CLOTH

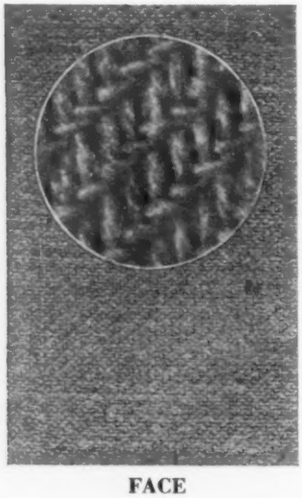
UMBRELLA CLOTHS are very closely woven (though lightweight) cloths made with carded or combed yarns. They are usually made in a plain weave, but are also made in filling-twill and filling-sateen weaves. All of these cloths have a wide tape selvage to which the ribs of the umbrella are sewn. These selvages are strong, closely woven, and about ½-in. wide, or wider. Some qualities have woven stripe borders.

Finishes used: Usually dyed fast black (aniline) and given a water-repellent finish.

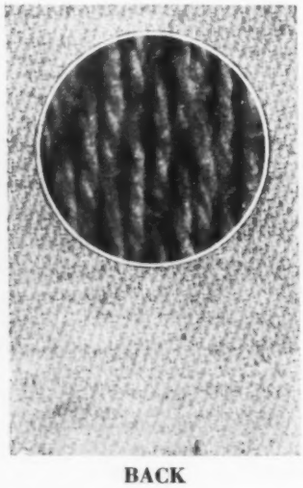
Uses in finished state: Umbrellas, sun shades.

Examples of umbrella cloths:

29″	64x72	7.50	carded (30s to 40s yarns)
26″	68x76	6.40	carded (30s to 40s yarns)
26″	88x112	7.75	combed (average 50s yarns)



FACE

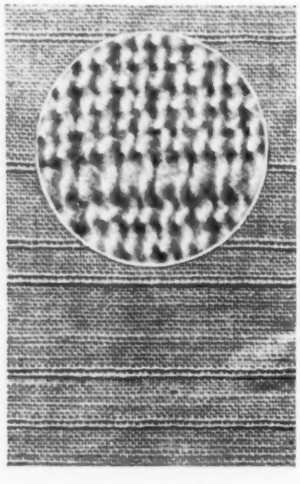


BACK

Inselin-Jefferson Co.

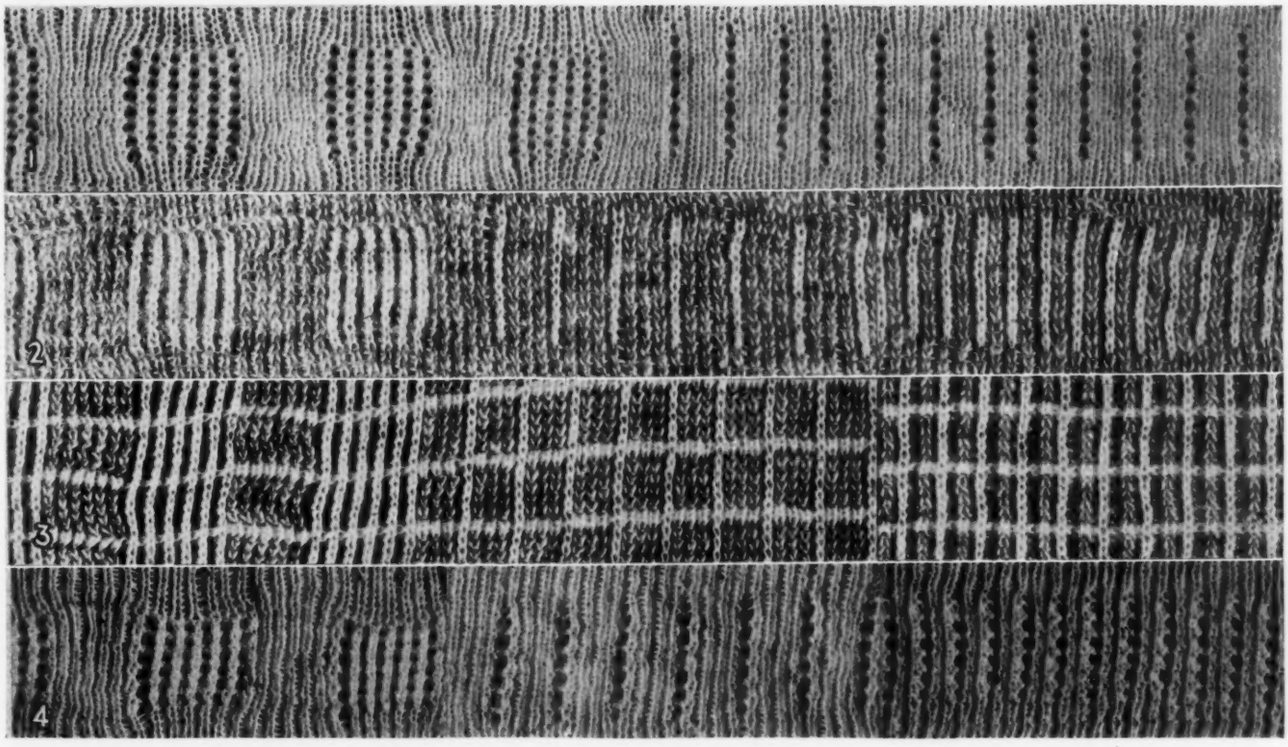
FRENCH-BACK SERGE TWILL

38″, 96x52, 1.64 yd. ply yarns



COTTON SHANTUNG

37″, 54x37, 3.50 yd.



New in Underwear Fabrics

Interesting line for spring knitted in tuck and plain stitch with long-latch needles

By Paul W. Niles

THE swatches illustrated herewith represent fabrics in a new line of women's knit underwear which will be on the market in the spring. These swatches are directly from the knitting machines and do not fully present the pleasing appearance of the finished fabric.

The entire line of fabrics is produced by means of long-latch needles and an automatic chain attachment to control the length of pattern. In other words, the pattern consists of tuck and plain stitches, and the chain governs where and when the tuck stitches operate. It will be noted that each swatch has a panel front, and therefore the front of the garment has a different pattern from the back.

Four stitch effects can be made in each garment—tuck, plain, block, and panel-stripe. The combinations possible are almost endless. Any knitter with a length chain can arrange the long-latch needles to suit whatever design may occur to him, and then set the chain to cut up the pattern into blocks or other motifs. It will not be necessary to go into detail concerning the set-up of any pattern, because a very wide range of effects can be obtained by simple changes either in the needles or chain.

For instance, in the production of fabric No. 1 every fourth needle is a long-latch, except in the front panel, where the layout demands six long-latch and six plain or regular needles. The chain is arranged to go around twice with the long-latch needles operating and then to go around twice on plain. This arrangement is made possible by the use of one high link and one low link in the chain. If the whole chain is arranged one high and one low, the stitch effect will run all one design; but this chain can be arranged to make either the plain or the tuck at any desired point. For instance, it can make a shaped shirt with a fancy stitch for the body and the plain stitch for the waistline as usual; or the fancy design can be used above the waistline only, with either a plain or tuck body.

Fabric No. 2 has been knitted in color the better to offset the pattern for illustration purposes, but of course such a distinctive color would not be used commercially in women's underwear. This pattern is simply two panels broken by a stripe, and a knitter with any experience whatever on shaped goods will see at once how to produce it.

Such a knitter can look at No. 2 and vision at least one hundred different ways to change the pattern. For instance, at first glance he will note that by changing the panel from 1x1 three times for the long latch to 6x6, without changing the plain, he will get a more pronounced white stripe in the panel.

This will be even more pronounced if he uses a two tuck instead of one, and a three tuck will draw in the stitches for another design. If he breaks this up, he will have fabric No. 3. Fabric No. 4 is the same as 3, except for two panels and a double tuck. The chain for each one of these patterns is arranged one high and one low.

...Free... For the Asking

READERS interested in the catalogs and other useful literature reviewed on this page, may secure copies by writing to TEXTILE WORLD, 330 West 42d St., New York.

Motor Drives. Rockwood Mfg. Co. Division, General Fiber Products, Inc. Illustrated folder cites performance of company's products, with particular reference to use in woolen blanket mills and the cotton textile industry.

Slasher Control. The Foxboro Co. Eight-page illustrated booklet describes company's slasher control system and a typical installation, together with data on box and cylinder temperatures and such size equipment as kettles, storage tanks and box levels.

Lathes. South Bend Lathe Works. 24-page catalog announces 1937 model 9-inch precision lathe. Text and 150 illustrations describe seven styles for widely varied installations. Lathe takes 38 different attachments for all types of metal work.

Blowers. Breuer Electric Mfg. Co. Illustrated folder, "Better Methods of Cleaning for Textile Mills," describes many textile uses for company's product in blowing, vacuuming, spraying and other functions on spindles, cams, couplings, etc.

Steam Turbines. Allis-Chalmers Mfg. Co. 20-page bulletin, with photographs and charts, describes standard line of high pressure, non-condensing steam turbine units, three valve reaction type, suitable for top turbine service or furnishing steam for high pressure process work.

Wiring. Anaconda Wire and Cable Co. 30-page spiral-bound booklet, "Industrial Wiring Survey", describes (a) the general plant survey covering all electrical equipment, and (b) the feeder and circuit analysis, covering a detailed examination and charting of layout.

Silicates. Philadelphia Quartz Co. Folder discusses service of products, with abridged bibliography of company's technical publications.

Paints. Detroit Graphite Co. 12-page booklet, "Paints for the Textile Industry" offers paint suggestions with sample colors for interior and exterior of mills, and cottages, warehouses, etc.

Chemical Equipment. Haveg Corp. 30-page illustrated booklet, discusses corrosion-resistant chemical equipment and relation of company's product thereto, with emphasis on dyeing vats and machines and other textile equipment.

Liquid Chlorine. Columbia Alkali Corp. Folder describes company's new product, liquid chlorine, and its textile uses such as bleaching and rayon yarn manufacture.

Profit-Sharing. Metropolitan Life Insurance Co. Principles, practices and purposes of profit-sharing are set forth in 30-page staple-bound booklet entitled "Sharing Profits with Employees".

Metals. International Nickel Co. 48-page illustrated booklet serves as guide to company's non-ferrous nickel alloys in fields of engineering application. Specific problems covered minutely in booklet's 20 sub-divisions, with many illustrations.

Welders. Lincoln Electric Co. Two folders: one covers dual continuous control for all values of welding current, with specifications and diagrams; the other describes company's model SA 150 in detail.

Materials Handling. Cleveland Crane & Engineering Co. Folder describes company's tramrail system in wide variety of industrial uses.

Electrical Control. Allen-Bradley Co. Folder-letter tells how company developed and designed solenoid starter to simplify inspection and replacement task.

Control Instruments. Cochrane Corp. Folder covers company's general line of instruments. November issue, *Cochrane News* discusses money-saving and gives details, with charts and photographs of company's advertising coverage.

Paint. Aluminum Industries, Inc. 60-page bound volume, "Permite Aluminum Paint," includes illustrations and descriptive matter on use of company's product to protect dye houses, weave and spinning rooms.

Coning. Universal Winding Co. 12-page bulletin No. 144 describes characteristics, advantages and uses of roto-coner.

Shipping. Railway Express Agency, Inc. Three folders—one telling how express service simplifies collections, the second describing value of such service in forwarding exhibits to conventions and shows; third analysing economies effected by use of air express division service for textile and other shipments.

Sheep and Wool. Eavenson & Levering Co., Sheep and Wool Map of the World. Shows most of improved breeds and some native sheep. Gives type of wool, average weight of fleece, average shrinkage, and use (for carpet or clothing purposes) of wool. Map was prepared by Joseph P. Sims.

Oxygen Lance. Linde Air Products Co. Eight-page booklet, illustrated, describes the oxygen lance and tells how and for what purposes it is used; it is addressed mainly to anyone working with heavy sections of metal.

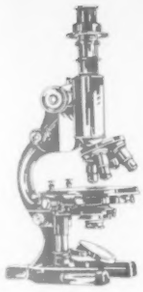
Hosiery. Louis Hirsch Textile Machines Co. Folder gives statistics on hosiery output by company's Kalio Complet, compiled from mill records.

Steam Generating. Edge Moor Iron Works, 20-page catalog No. 102, illustrated, describes company's steam generating equipment, including bent tube, cross drum, long drum and waste heat boilers, with list of representative users.

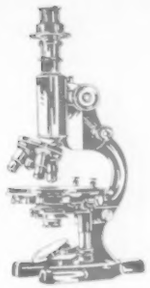
Knife Grinding. Samuel C. Rogers & Co. Leaflet describes circular knife grinder.

Rubber Products. Diamond Mechanical Rubber Goods Division, B. F. Goodrich Co. 28-page illustrated catalog contains descriptions of 50 mechanical rubber products and accessories, such as transmission and conveyor belting, hose and fittings, tubing, packing, cements, valves and matting.

Miscellaneous. Recent issues of manufacturers publications containing items having a textile slant are as follows: *Hyatt Rollergravure*, photograph of cloth washing machine equipped with company's product. *Rayon Warp Sizing Specialist* analyzes problems involved in changeover to Hook Reed method. *Houghton Line* presents results of E. F. Houghton & Co.'s size check-up tests of sized and unsized cotton warps. Sinclair *Service Factor*, discusses lubricating problems. *New Departure News* describes three types of bearings featured at recent Automobile Show in New York. *Armstrong Trap Magazine* contains articles on economies effected by trap equipment. *Needle's Eye* discusses manufacturing and merchandising problems of the knitted outerwear and underwear industry.

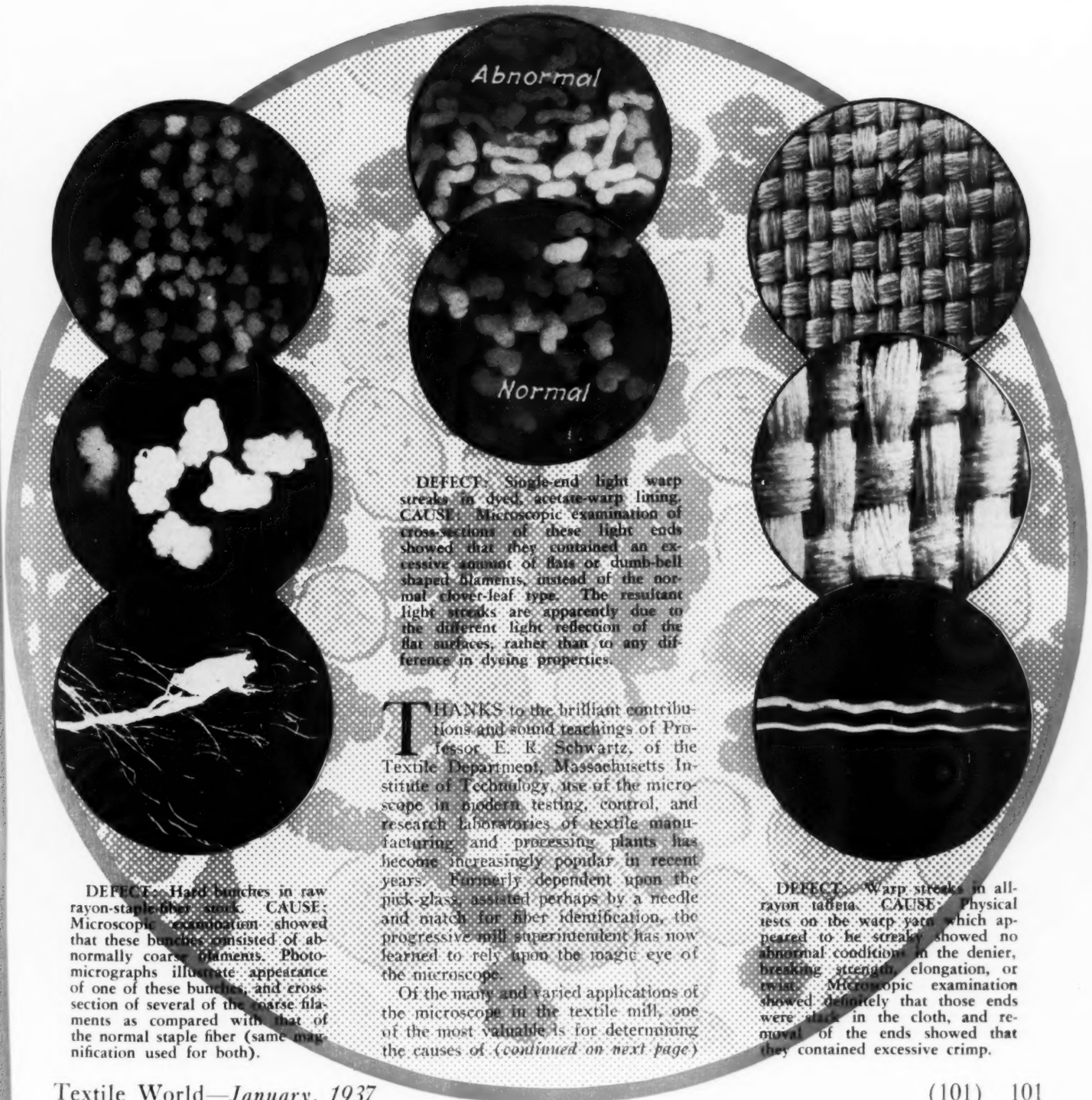


Quick, Watson, the Microscope!



It will give a clue to defects in rayon fabrics

By Julius B. Goldberg



DEFECT: Hard bunches in raw rayon-staple-fiber stock. CAUSE: Microscopic examination showed that these bunches consisted of abnormally coarse filaments. Photomicrographs illustrate appearance of one of these bunches, and cross-section of several of the coarse filaments as compared with that of the normal staple fiber (same magnification used for both).

DEFECT: Single-end light warp streaks in dyed, acetate-warp lining. CAUSE: Microscopic examination of cross-sections of these light ends showed that they contained an excessive amount of flats or dumb-bell shaped filaments, instead of the normal clover-leaf type. The resultant light streaks are apparently due to the different light reflection of the flat surfaces, rather than to any difference in dyeing properties.

THANKS to the brilliant contributions and sound teachings of Professor E. R. Schwartz, of the Textile Department, Massachusetts Institute of Technology, use of the microscope in modern testing, control, and research laboratories of textile manufacturing and processing plants has become increasingly popular in recent years. Formerly dependent upon the pick-glass, assisted perhaps by a needle and match for fiber identification, the progressive mill superintendent has now learned to rely upon the magic eye of the microscope.

Of the many and varied applications of the microscope in the textile mill, one of the most valuable is for determining the causes of *(continued on next page)*

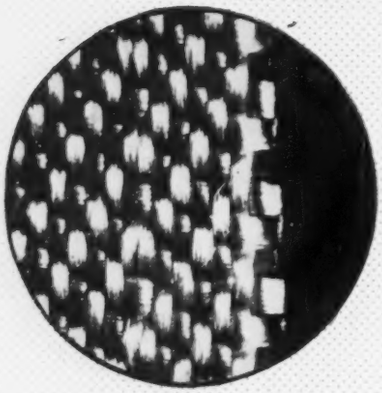
DEFECT: Warp streaks in all-rayon taffeta. CAUSE: Physical tests on the warp yarn which appeared to be streaky showed no abnormal conditions in the denier, breaking strength, elongation, or twist. Microscopic examination showed definitely that those ends were slack in the cloth, and removal of the ends showed that they contained excessive crimp.

MICROSCOPE TO DEFECTS IN

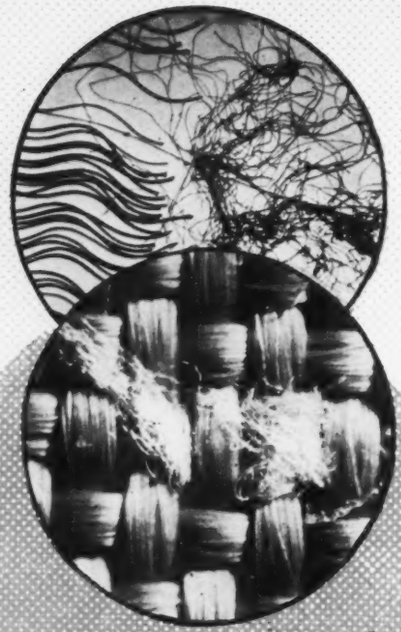
(*continued from previous page*) defects in yarn or fabrics.

The cause of the defect will often be revealed simply by viewing the fabric under the microscope. In other cases, observation of a single yarn will show up the defect more clearly.

Occasionally one will find that microscopic examination of cross-sections of the yarn is necessary, as for example, in detecting the exact cause of defects due to use of mixed yarns or

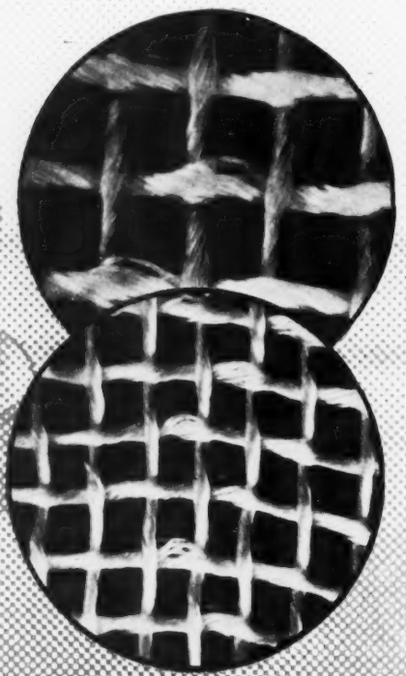


DEFECT: Single streak running warpwise about ¼ in. from one selvage. CAUSE: Photomicrograph shows that this fault was due to two ends having been woven as one.

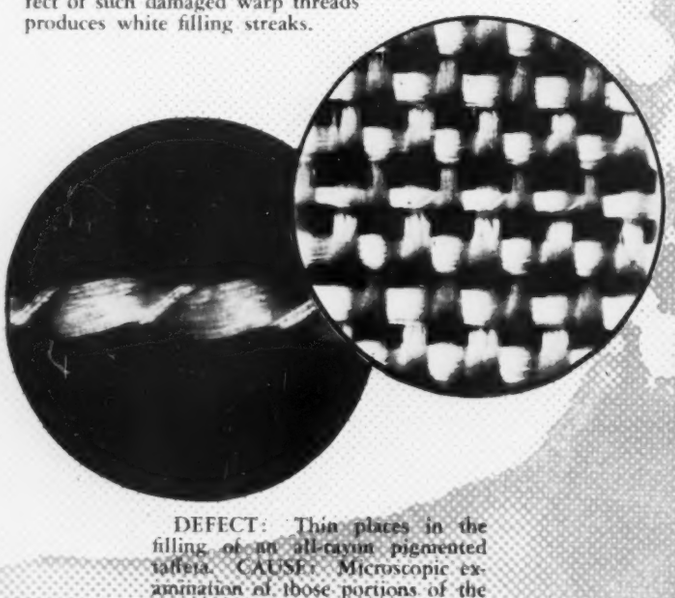


DEFECT: Bunches in filling of all-rayon chalk taffeta. CAUSE: It was assumed that the fine-filament yarn used in this fabric (150/100 pigmented) was being chafed and was balling up because of faulty warp-sizing. Photomicrographs reveal the fact that the filaments constituting the bunches are much finer than the filaments in the normal yarn; hence the yarn was at fault, not the weaver.

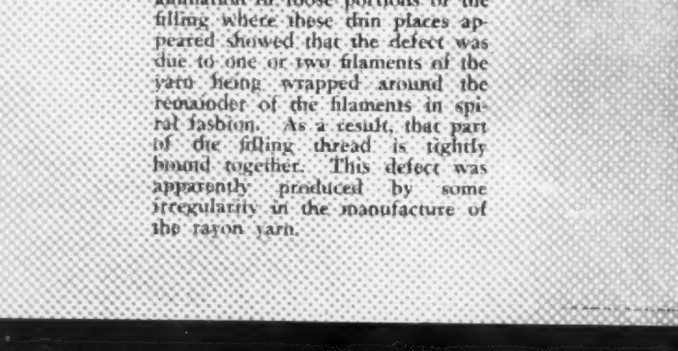
DEFECT. White filling streaks in black-dyed, acetate-warp crepe. CAUSE: Photomicrograph shows that these apparent filling streaks are actually abraded warp threads. In this case, the filaments in a number of successive warp threads have been damaged by the shuttle during the weaving. The optical effect of such damaged warp threads produces white filling streaks.



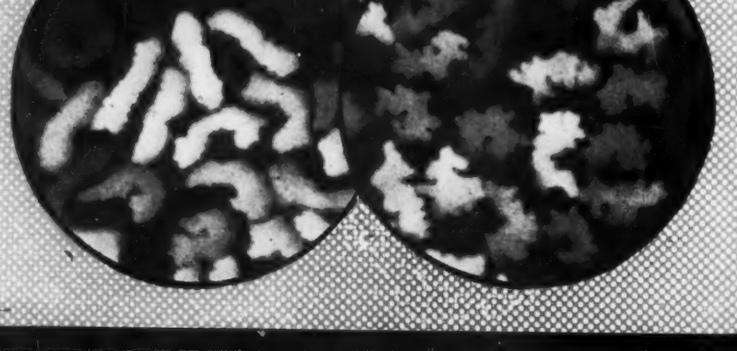
DEFECT. Crease marks in finished all-rayon voile. CAUSE: Photomicrographs show that the crease marks are due to displacement of the count filaments in several consecutive filling threads. Subsequent investigation showed that the goods were being chafed when they were being handled in the dye becks.



DEFECT: Filling shade bands in dyed rayon piece fabric. CAUSE: Occasional full cops of filling yarn dyed lighter than the remainder of the filling. By analysis, both light and dark dyed yarns were found to be of the same denier and filament-count. Examination of cross-sections of the rayon yarns in both portions, however, showed a marked difference in filament contours. Two different makes of yarn had been accidentally used in the weaving of this cloth. The cross-section examination gave positive proof as to what yarns were mixed. The experienced microscopist can thus identify a good many rayon makes.



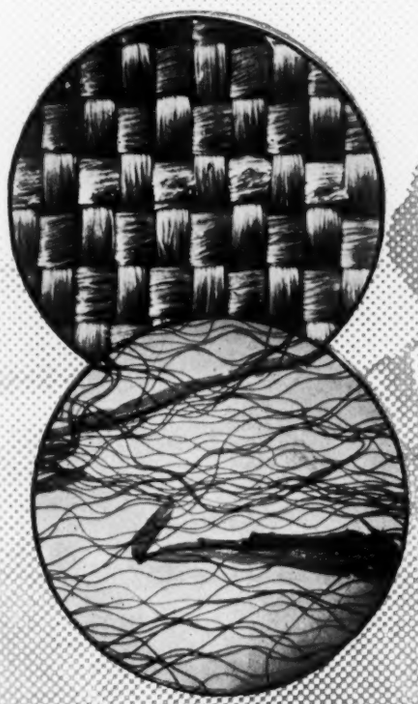
DEFECT: Thin places in the filling of an all-rayon pigmented taffeta. CAUSE: Microscopic examination of those portions of the filling where these thin places appeared showed that the defect was due to one or two filaments of the yarn being wrapped around the remainder of the filaments in spiral fashion. As a result, that part of the filling thread is tightly bound together. This defect was apparently produced by some irregularity in the manufacture of the rayon yarn.



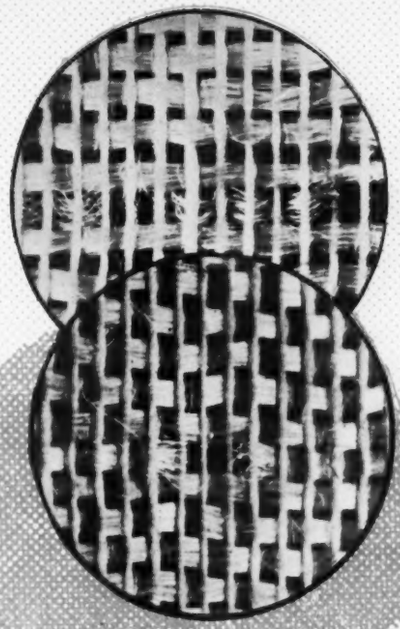
GIVES CLUES RAYON FABRICS

in establishing certain types of rayon imperfections.

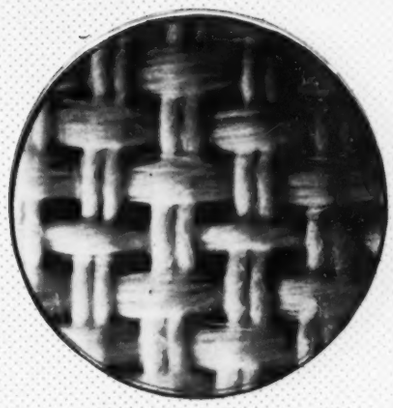
If desired, permanent records of the findings can be kept in the form of drawings made with the aid of a camera lucida or, better, in the form of photomicrographs. Examples of the way in which microscopic analysis has actually been used to reveal various defects in rayon yarns and fabrics are shown in the accompanying photomicrographs, whose captions tell the story.



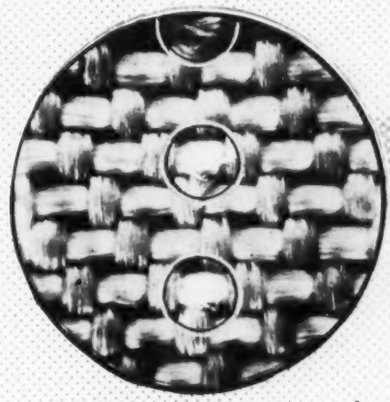
DEFECT: Chafed appearance in filling of all-rayon pigmented taffeta (printed). CAUSE: Photomicrographs show appearance of the streaky pick in the fabric and the same yarn when removed from the cloth. It is evident that a few abnormally coarse and straw-like filaments in the rayon produced this defect.



DEFECT: Cuts in filling of finished rayon-filled alpaca. CAUSE: Photomicrographs show that the cuts are comparatively sharp. In one case, the pick is severed in two places. These indicate that the damage was present in the gray goods (probably sand-roller cuts), since it is unlikely that such cuts could have been produced by any finishing-plant equipment or operation.

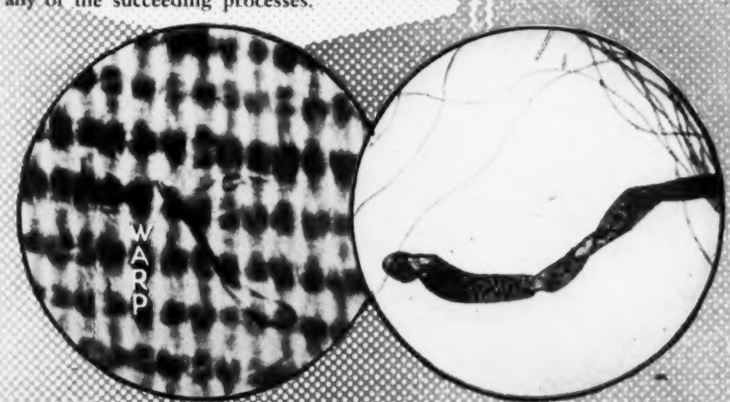


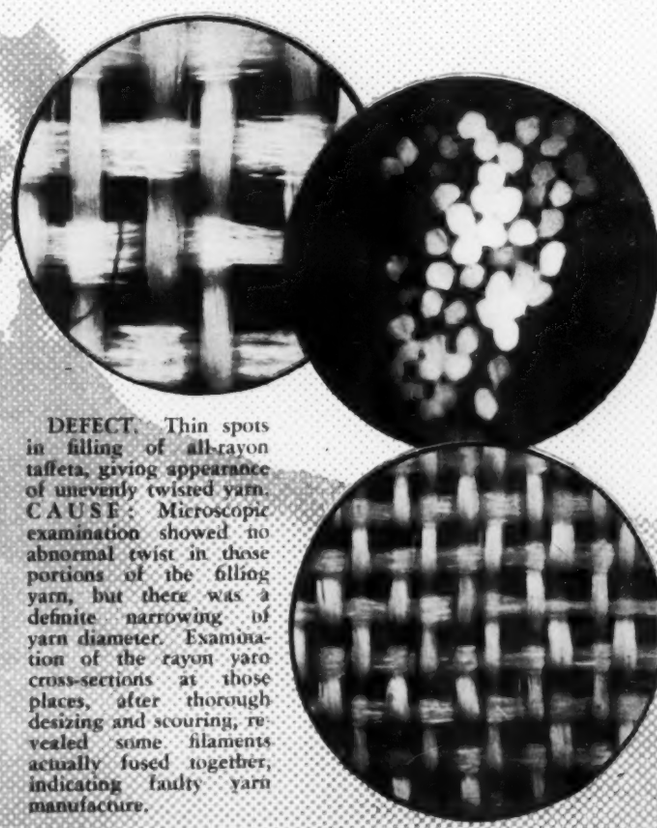
DEFECT: Short streaks in filling of rayon-filled oxford fabric. CAUSE: Photomicrograph shows that this fault was due to an abnormal highly twisted place in the rayon yarn.



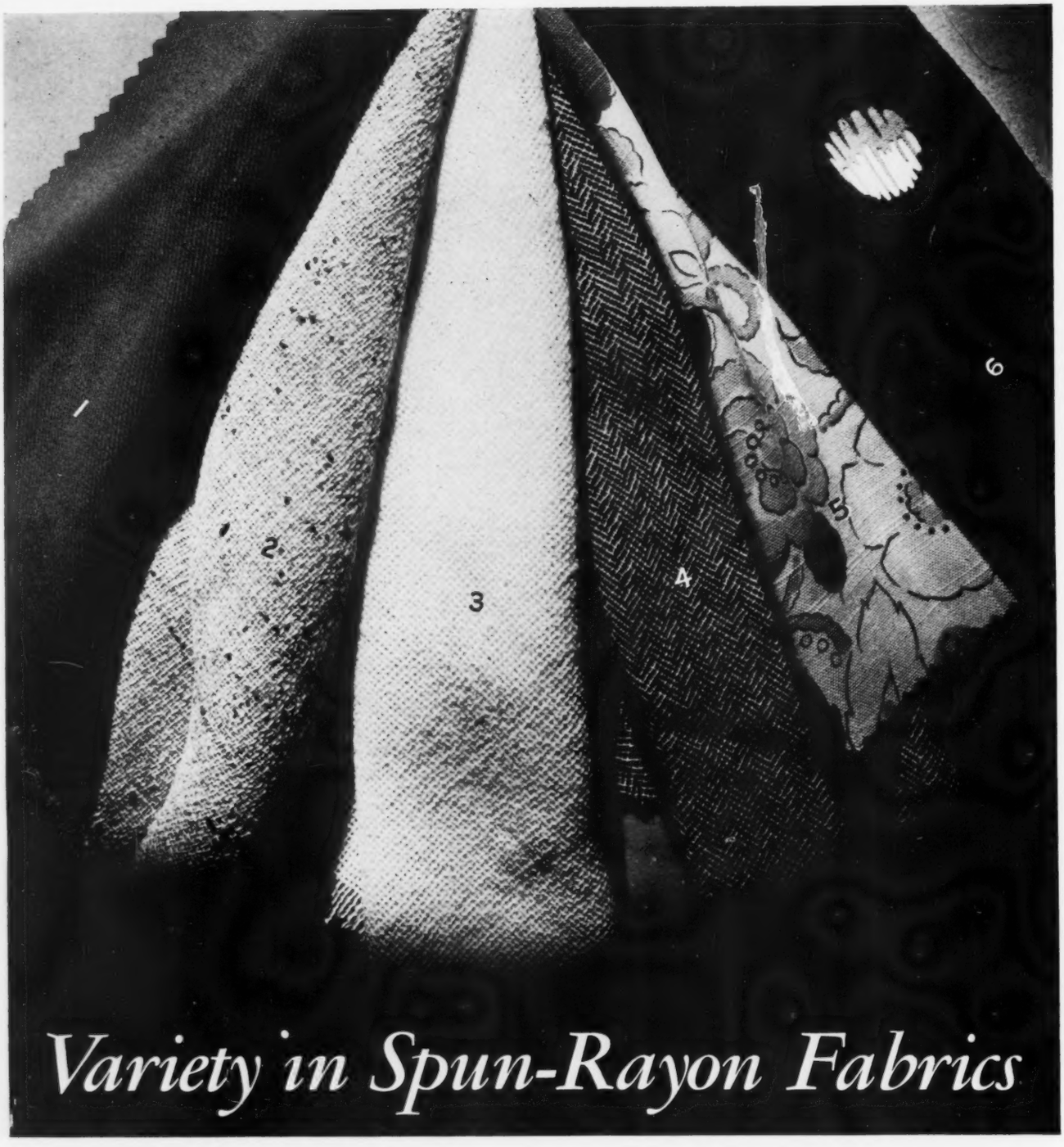
DEFECT: Single warp streak running through portion of a cut of all-rayon twill gray goods. CAUSE: Photomicrograph shows that this streak was due to a few ruptured filaments in a number of filling threads, the cuts running parallel to the warp. This damage was evidently caused on the loom during the weaving of the cloth.

DEFECT: Dark specks in dyed, spun-rayon broadcloth. CAUSE: Microscopic analysis showed that the dark specks were darker-dyed coarse fibers which projected from the surface of the fabric. Photomicrographs show appearance of the specks in the cloth (by transmitted light) and a single, coarse fiber contrasted with normal staple fiber. Faulty production of the rayon staple (by the rayon manufacturer) was responsible for this defect rather than faulty handling in any of the succeeding processes.





DEFECT: Thin spots in filling of all-rayon taffeta, giving appearance of unevenly twisted yarn. CAUSE: Microscopic examination showed no abnormal twist in those portions of the filling yarn, but there was a definite narrowing of yarn diameter. Examination of the rayon yarn cross-sections at those places, after thorough desizing and scouring, revealed some filaments actually fused together, indicating faulty yarn manufacture.



Variety in Spun-Rayon Fabrics

WHATEVER else 1937 may bring to the textile industry, it seems safe to predict that the year will witness marked expansion in the field of spun rayon fabrics. The progress already made in that direction was a highlight of 1936, and the lessons learned during the year have equipped both technicians and merchandisers for further advance.

Above are shown half-a-dozen fabrics, widely varied in type and construction, which exemplify some of the more notable recent developments. Especial significance attaches to No. 1, as indicating how wool-like a 100% spun rayon fabric can be; this is a blue serge weave, made entirely of Crown brand staple. The broken diagonal (No. 4) offers evidence of spun rayon's progress in mixtures for women's suitings and coatings. This fabric is of Du Pont staple: Loom count 36x34; warp arranged one end of 12s yarn consisting 50% of 5½-denier, 2-in. dull staple rayon, and 50% of 3-denier, 2-in. bright staple rayon, and one end consisting 85% of staple rayon and 15% of 64s wool (black). Filling same as warp.

Nub effects continue important and No. 2, also Du Pont, shows how nub appearance may be achieved in a fabric which is mostly spun rayon. It comprises: warp and filling 87% spun rayon, 10% wool blend, 3% silk noil. Likewise mostly of spun rayon, No. 3 (Du Pont), has important market possibilities as suiting or coating: warp, 85% spun rayon, 15% wool; filling the same.

Use in challis types, which promises to increase this year, is a major phase of the spun rayon development. No. 6, a resist print with dark-blue ground, containing 100% Crown brand staple rayon, is an interesting new example of the challis type.

Linen simulation was one of the early phases of spun rayon development, and progress in that field has been steady. No. 5, 100% Crown brand staple, is a fabric of the linen type, used for printing or plain, showing a three-color floral pattern on white ground.

Presenting

THE SMARTEST FABRIC AT MIAMI BEACH

—a printed

ACETATE JERSEY

that looks like satin!

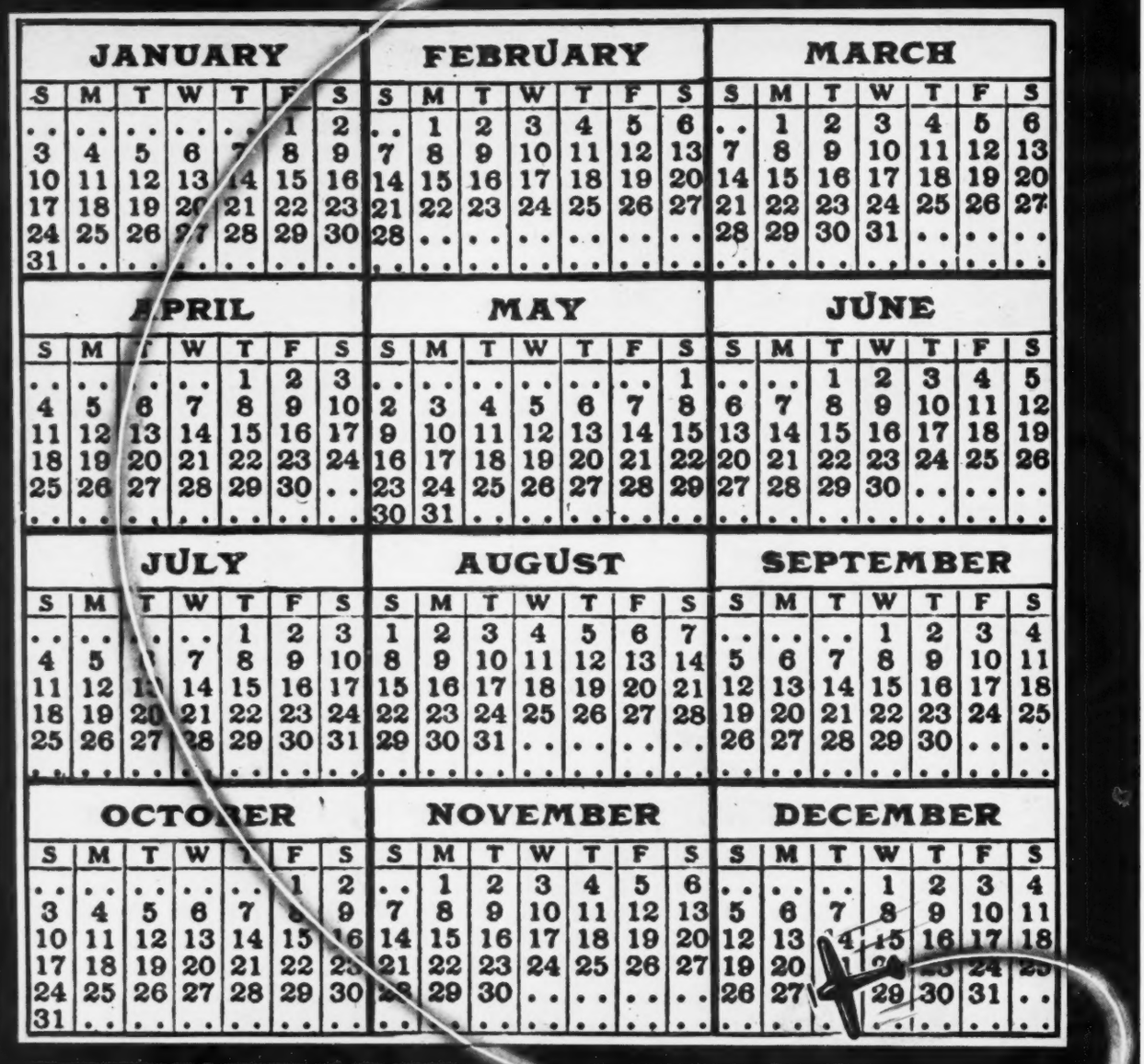
Lovely, shimmering, radiant, destined to be the "hit" fabric for 1937 beach and play clothes, this amazing knitted material adds another name to the list of fine fabrics created in Eastman yarn. Definitely new in fashion importance, it also is an achievement in knitting, combining, as it does, acetate printing with the satin effect generally confined to woven fabrics.

To keep up with the style trends in fabrics consult the Fabric Development Service of the A. M. Tenney Associates, 171 Madison Avenue, New York City. Sales representatives for the Tennessee Eastman Corporation, a subsidiary of the Eastman Kodak Company.

EASTMAN ACETATE YARN

Rapidase

for Rapid Efficient Desizing



All Through 1937

WALLERSTEIN COMPANY 180 MADISON AVE., NEW YORK, N.Y.

ADVERTISING PAGES REMOVED

The Overseer's Corner

Pete Comes Back

BILL wasn't feeling very cheerful as he walked toward the mill gate on Monday morning. It was almost two years since his friend Pete had decided to see some territory while he had the chance and had taken that job of getting a mill going down in Brazil. Young fool to do such a crazy thing, he thought, just as he bumped into someone.

"Why don't you do your sleeping in bed?" said a familiar voice.

Bill looked up quickly, only to meet Pete's laughing eyes.

"What are you doing here?" he gasped, as they shook hands warmly.

"Well, I happen to work here," Pete smiled. "I wrote and told the super that I had learned Portugese about as well as I wanted to and that I'd sort-of like to get back to the old U. S. A., if I could find a job. He wrote and said to come along, so here I am. How have things been going with you?"

"Young man, don't you ever read the newspapers?" Bill chided. "Do I have to take you off in a corner and whisper to you that the textile industry is having a boom?"

"Yes, I know all about that, but what about yourself?"

"As I wrote you in that letter you never answered," Bill rumbled, "things have gone along about the same, although I've missed the old arguments we used to have."

"Arguments?" said Pete in apparent amazement. "I don't remember any arguments. Of course I do recall that every once in a while you would get some foolish idea in your head and I'd have to set you right, but you couldn't really call those educational efforts on my part arguments."

"Why you Brazil nut!" Bill exploded. "Just wait until the next overseers' meeting. Pete, my lad, you're going to wish that you were back in South America, although it's about time you found out that the best thing for an overseer to do is to stick to one mill."

"Nonsense!" Pete retorted. "The way to get experience is to move about."

• ***Now that Pete is back, they will probably have one of their old-fashioned arguments next month.***

A Plea Answered

Editor, Overseers' Corner:

I have long been an interested reader of the Overseers' Corner and derive a great deal of information as well as entertainment from it, but I must say that you destroyed a great deal of the human interest when you removed those two likeable characters, Pete and Bill.

It seemed that they always agreed to disagree, and a fellow found himself lining up with one or the other. It was always interesting to anticipate who would win the argument.

I would very much like to see them restored to their rightful place in the Corner, and I believe there are many other readers who will agree with me. What about it, Mr. Editor? W. D. B.

Editor's Note: Fortunately, Pete and Bill are again back at the same mill and return to our columns this month in answer to letters such as the one above from W. D. B.

Good Housekeeping

Editor, Overseers' Corner:

Cleanliness pays dividends. Nowhere is this more true than in a textile mill. The elimination of tobacco spitting, the maintenance of sanitary toilet facilities, keeping all work spaces and aisles clear and orderly, maintaining a clearance around all fire equipment, and having fire towers and stairways clean and well painted are all worth while.

Good housekeeping conditions are equally as important in the mill as at home. If you should ask why in a textile mill, here are the answers:

(1) The elimination of accidents; you just don't have as many and as severe accidents in a clean plant.

(2) The effect on worker morale; no one wants to work in sordid or squalid conditions. Labor respects and appreciates clean and sanitary working conditions.

(3) The elimination of fire hazards, which means a reduction in insurance premiums.

(4) An improvement in operating efficiency. You can't expect efficient results in a dirty or ill-kept mill.

(5) Cloth coming in contact with dirty floors, tobacco juice, lunch scraps, etc., does not usually sell as first quality.

So it's really a matter of dollars and cents. Good housekeeping will pay a return. W. G.

No Admirer!

Editor, Overseers' Corner:

I am not so hot about one part of the Overseers' Corner. In my humble opinion, that Super has the idea that he is a *superhuman* individual. He seems to think his head is full of real heavy ideas and that he knows everything about everything. I have met a few like him in my time, but thank the good Lord all supers are not like him. If they were, the textile business would be even worse than at present. Some of the Super's ideas that he thinks are the result of a bright and shining light are only caused by a mental colic.

A. H. H.

Editor's Note: The Super's comment on the above follows:

"At least A. H. H. must have read some of my stuff! Now that I have retired from the literary field, due to pressure of other work, I'll admit to him secretly that running a mill is a cinch compared with writing a column every month."

Cleanliness Pays!

Editor, Overseers' Corner:

Having been employed for the last seventeen years in a plant that is noted for

CONTRIBUTIONS *to "The Overseers' Corner" are paid for without regard to length. We will use letters discussing the narrative on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute kinks or practical helps will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. If these pages interest you—contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York, N. Y.*

its cleanliness, I feel that I can say that cleanliness pays, and pays big. In this plant everything is as spick and span as an up-to-date dining room, and the mill is surrounded by a beautiful, well-kept lawn with a profusion of pretty flowers in season.

Every employee in this plant seems to take pride in his surroundings and feels that it is part of his duty to see that it is kept clean. I often hear them remark on what a difference between this and the plant that is cluttered up with old lumber, scrap iron, burlap sacks, etc.

This plant has always been prosperous and has the reputation of paying the highest wages for unskilled labor of any plant in this section. A dirty, uncouth mill might pay profits for a time, but there are other things besides cash dividends to take into consideration. The cash value of good-will in a mill that is dirty and messy would be practically nil.

J. E. B.

• • •

PRACTICAL HELPS FOR OVERSEERS

Dye Stuff-Barrel Racks

Suitably arranged racks and shelves are a definite aid to efficient drug-room operation. Moreover, construction of such equipment is easy, inexpensive, and within the province of practically any mill carpenter shop.

A method for constructing racks is shown in the accompanying diagram. Shaded portions are constructed of 2x4-in. lumber, other parts of 2x2 in. The barrels of dyestuff rest on stringers *A* and *B*. Pieces *C* serve the purpose of raising the backs of the containers and tilting them slightly forward, thus making access to their contents much easier.

Strip *D* prevents any slippage to the front, and pieces *E* and *F*, which are placed on each side of each barrel, eliminate the possibility of containers sliding from side to side.

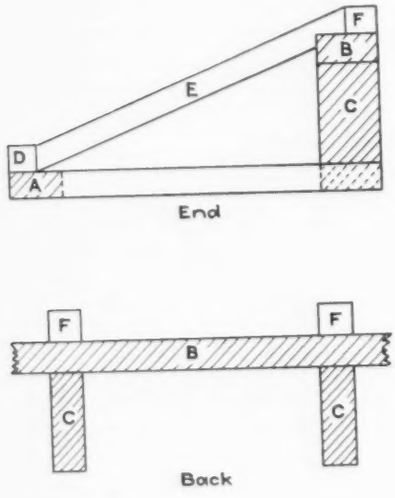
Racks may be constructed in any convenient length, depending upon the size and shape of the drug room. It will be necessary to reinforce the elevated stringer *B*, at frequent intervals, with pieces cut as *C*, in order that they may be strong enough to bear the weight of several barrels of dyestuff.

As a general rule, it will be found most satisfactory to place the racks around the walls of the room, although in the case of an unusually large drug room it may prove desirable to run a double row of racks, back to back, down the center. Above the barrels a row of shelves should be built, thus providing a convenient place for storage of 5-lb. cans and other small quantities of dyestuffs.

The construction and installation in the drug room of such racks and shelves solve half the problem. The other half—equally important to efficient operation—lies in the proper arrangement of colors on the shelves and racks. Those dyes which are most frequently used should be accorded positions most accessible to the weighing tables and dyehouse. Also, the same dye, whenever possible, should always occupy the same space on the rack. This will save much time which the drug clerk might otherwise be forced to waste while hunting a particular color. It will also prove of invaluable assistance when, as sometimes happens, a label becomes misplaced.

When both of these jobs—rack construction and dyestuff arrangement—have been completed, it will be found that wanted dyes are always in easily accessible positions, that no dye containers are in contact with the floor, that the drug clerk's time is conserved and used to greatest advantage, that waste and loss are considerably cut down, and that the drug room in general is operating at a higher point of efficiency than before obtained.

E. P. Howard



Checking Waste

When you say "waste," it brings various definitions to mind. The boy-friend would say it is something around which he puts his right arm when he takes his girl-friend out. Mother would say it is a garment she bought at the corner store. To the mill man or manufacturer, it means only a headache that never seems to get cured.

The head of any organization can never combat the evil alone, without the cooperation of everybody in the organization. No matter what your title may be, agent, superintendent, or overseer, you cannot see things to be done just by walking casually through your plant. The men in charge under you, as a rule, will not come forward, with suggestions unless you ask, or show them that you have similar ideas.

The next time you walk through your "job," make a note of everything that looks like waste to you, whether it is stock, time, lights, elevator waiting, half speeds, help talking with machines stopped, help walking a long distance for water or toilets, cotton, oil, grease or water on the floors, and a list as long as your arm of other forms of waste. By the time you get back to your office, you will begin to wonder if every other organization has the same problem, and you will be thankful that the stockholders are scattered all over the country and are not able to walk through with you and see the same things you did. When you have your list, you have something to work on.

R. J. Farrell

Checking Incidental Costs

The average overseer does not bother himself sufficiently about *all* the costs in his department.

A machine breaks down, the fixer takes out a lot of parts, an order is made out for new parts or repairs, and finally the machine is fixed and running again. Did it cost 50 cents or $50? Were all the new parts necessary? How long will the repairs last?

If we make or buy spinning bands, are we getting the proper life out of them? If they were made differently, would the bands be better or worse, and would the cost be higher or lower than at present? How long do shuttles last? Is the best size or grade of chalk or crayon used to get the most out of the purchase? How long does a broom last on an average?

We know all the questions, but do we know all the answers? It is the small leaks that drain away the life of anything. An accurate account should be kept in each department by means of a card-filing system. A card should be made out for each machine, and all repairs, replacements, and supplies used on the machine should be entered on the card. General supplies should be entered on separate cards. It would be a revelation to some overseers who have never followed the small costs of their departments.

R. J. F.

An Idea For Cleaning

The other day I was in the office when a salesman dropped in on his regular monthly call to see what orders for mill supplies we had for him.

"We sure did appreciate your order last week for a dozen hand drills," he greeted me. "You know we have a lot of these drills on hand. It seems that everybody now is ordering small electric drills, and sales of hand drills have been very few. Do you mind telling me what you wanted these for?"

"If you have time to go over to our card room with me," I said, "I can show you better than I can explain, and you will know how to show fellows in other mills."

We went to the mill and as luck would have it we got there just as some frame hands were cleaning their steel rolls.

"Why are they drilling holes in the rolls?" asked the salesman.

I took one of the hand drills and showed him that instead of a bit in the drill it had a piece of stiff telephone-line wire about 6 in. long. The operator would run this wire between the bottom steel rolls and the top rolls at the ends and where the saddles rest. Then, by turning the crank on the drill, the waste and fly were caught by the wire and wrapped around it. The stands, saddle levers, roll harbors, and rolls were cleaned by just running this wire bit over them while the crank was being turned. All

this is done while the frame is running. The lint and fly is wrapped around the wire and is stripped off every few minutes by the operator running his thumb and forefinger over the wire and sliding it off the end.

"I see what they are doing," said my guest. "But why is it necessary, and how were the rolls cleaned before you got the drills?"

I explained that, unless this waste was picked off from time to time, it would accumulate and would drop or get caught on the roving as it ran near by and would cause uneven yarn. It was our rule for the operator to pick his rolls once every eight hours. This was done in his spare time when he was not doffing or creeling and generally took him about two hours to get over his two frames. By using the hand drill, he can clean his two frames in less than one hour and does a much better job. Before we began using the drills, this lint was picked off with the fingers and it was hard to get the middle and back rolls clean. Also, it was easy to drop small pieces and they would get caught on the roving and get twisted in.

The salesman seemed very much interested (maybe he wanted to sell some more drills) and unless you are already using this or some similar method let me ask you to try out a hand drill. They do not cost more than a dollar or so and they save us a lot in better quality yarn and also in time.

Now someone tell me one of *your* pet ideas! A. B. C.

• • •

QUESTIONS AND ANSWERS

Knitting-Wheel Calculations

Technical Editor:

On a given number of cuts in a wheel, the wheel set at an angle of 40 degrees on a rib machine, what is the best way to figure out the diameter or circumference of the wheel? (8386)

Divide the number of cuts in the wheel by the cuts per inch of the machine times the cosine of the angle to get the circumference of the wheel. Since the cut of the machine is figured on the needle line and not at the outside point of the needle butt, a factor should be introduced to make the wheel slightly coarser to compensate for the difference between the cut of the machine and the needles per inch at the outside of the butt. This factor is approximately 0.9, and the circumference of the wheel as originally figured should be divided by it to make the wheel slightly larger or, in other words, slightly coarser.

Traveler Speed

Technical Editor:

I shall appreciate it if you will send me the simplest formula you know of to figure traveler speed. Had occasion some time ago to run some 1/14s, 17 turns, out of South American wool. We are using a 3-in. ring. We started up the frame with a spindle speed of 6,400 and burned half the travelers off in one doff. Then we brought the spindle speed down to 5,200, and it ran O.K. We didn't have to change travelers until the order was finished (four days), and even then they appeared O.K. Any information you can give me will be greatly appreciated.

Also what speed of spindle should we run on a 3-in. ring when making 1/18s core yarn of 24/1 cotton and 1/37 worsted, 6 1/2 turns? The bobbin, I think, has a 1 1/4-in. diameter barrel and a 7-in. traverse. (8366)

The following formula will give traveler speed in feet per minute:

$$\left[\text{R.p.m. of spindle} - \frac{\text{In. of sliver delivered per min.}}{\text{Dia. of bobbin in in. x 3.1416}}\right] \times \frac{\text{Dia. of ring in in. x 3.1416}}{12}$$

This formula may be simplified for rough calculation to the following:

$$\frac{\text{R.p.m. of spindle x Dia. of ring in in. x 3.1416}}{12}$$

We imagine, however, that the information you require is not so much how to figure the speed of a traveler as it is to find the highest practical traveler speed for a 3-in. ring running single 14s, 17 turns.

If a flange ring is used, about 4,000 ft. per min. is the fastest practical speed to get average length of life of travelers. If a vertical ring is used, about 5,200 ft. per min. can ordinarily be expected; and if an automatically lubricated vertical ring is used, this might be increased to as much as 5,500 to 5,800 ft. per min.

To analyze this further, using your own figures, when you were running at 6,400 with 17 turns of twist, you had a traveler speed of 5,013 ft. per min., which you can see is excessive for the traveler speed recommended by traveler manufacturers. When you reduced the speed to 5,200, you were running at 4,073 ft. per min., or just about the speed recommended.

With respect to spindle speed for core or plaited yarns with a 3-in. ring, you will find that the same rules hold. With a flange ring, the traveler should travel about 4,000 ft. per min., which would give you a spindle speed of about 5,200. With a vertical ring, you probably could get up to as high as 6,400.

White Spots on Hosiery

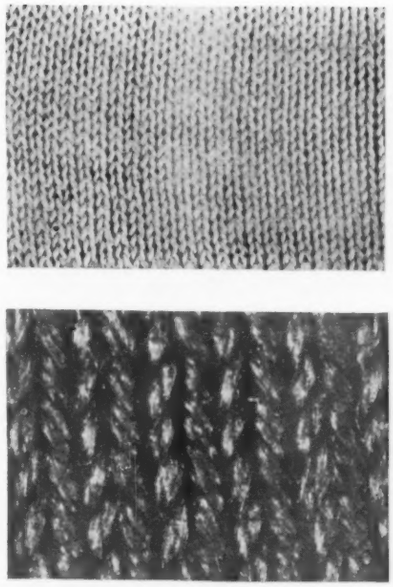
Technical Editor:

We are sending you a stocking in which you will note white spots on the cotton heel. For the last few years we have had considerable trouble with this without finding the cause. This spot occurs more frequently in the hotter months of the year, and is confined to the heels almost exclusively. Less than 0.1% is found in the tops or soles of the spotted stockings. This stocking can be stripped and re-dyed without covering the spot.

We have felt that this spot is caused by the transfer girl when topping the leg onto the foot. On chemical analysis in our laboratory, we have never found any type of metal which would cause a resist. We also feel certain that the spot does not come from dyeing; otherwise, it would occur on other parts of the cotton in the stocking. The fact that the stocking will re-dye again with the same spot in the same location, having the same irregularities, seems to point towards a resist caused in the manufacture.

We shall appreciate anything you can tell us that might help in eliminating this trouble. (8374)

This is a defect which is encountered occasionally; but its exact cause has been rather a puzzle. We have identified this spot as a chafe mark. We do not see, however, just where the tightly knit portion could become chafed in the manufacturing operation, unless, as you suggest, it is caused by the transfer girl in topping the leg onto the foot.



White spot and magnification of same

Upon raveling the stocking through the defective area, it will be noticed that where the leg streaks occur, the fibers have been disturbed and the yarn appears roughened. When the threads so picked are examined out under the microscope, they are seen to be in the form of very fine fibers. These very fine split-up fibers that protrude reflect the light differently and, while they appear as a resist to the naked eye, they are actually dyed as dark as is the balance of the stocking.

If the defective area in the heel of the stocking is viewed under high magnification, you will note a roughened area in some of the wales and a slight inclination toward poor plating at the point of the light spot. In other words, in part of the wale, in a number of these courses, the silk is more visible than it is in the balance of the stocking. This is apparent from the accompanying photomicrograph.

In silk, a similar defect is frequently spoken of as "lousiness," and is primarily due to an exfoliation of the silk threads; that is, splitting up of the filaments into their separate fibrils.

Just why this defect should happen more in hot weather than at other times of the year is difficult to explain. Possibly in whatever department this is happening, the operators rub their hands over the stockings to wipe off the perspiration and thereby rub the fibers at this place against the roughened surface of a loose coarsing pad or some other part of the stocking.

We do not believe that this chafing can be done in the dyebath, as chafing in the dyebath usually is manifest in the instep before it is in the heel.

Oiling the mercerized cotton used in the heel, such as giving it a backwinding op-

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eration with technical white oil used in the straight or neat form in an emulsion-trough would tend to lubricate the yarn. This would help the yarn to resist abrasion or chafing and might be a solution to the problem. Otherwise it seems to be a matter of checking up the transfer girls and seamers and examining the dyeing equipment for possible places where the mercerized cotton can be roughened slightly.

Knit-Pattern Fields

Technical Editor:

I would like to ask several questions in reference to Mr. Lancashire's article on design in the October, 1936, issue of TEXTILE WORLD ["Knit-Pattern Fields," page 72].

The example of 480 needles, 4 feeds, design area of 20x20, and a presser of 100 cuts fulfills in every way Mr. Cahill's rule of one design section plus or minus; that is, 480 divided by 100 is a minus lap of 20 needles. But when it comes to 660 needles or 840 needles, this condition is not fulfilled. But Mr. Lancashire says that these can be used because "the number of column repeats (for 660 needles) is 33 and this is not a factor in common with 5, the depth per design feed." I have read all that I can find about knitting design, but I have never heard this before. Is it correct?

The formula that Mr. Lancashire gives for spirality is the same that Chamberlin gives in his book "Knitting Mathematics and Mechanisms." However, neither makes very plain the significance of y in the formula. Could you shed a little light on this matter? (8425)

We have referred your inquiry to Mr. Lancashire, who replies as follows:

"Mr. Cahill's rule is based on the assumption that the first pattern row must be reproduced in an adjacent column at the next revolution of the cylinder. I submit that it does not matter whether the cylinder makes one or more revolutions before this condition is fulfilled, as long as the first row does ultimately come into an adjacent column. The condition can be fulfilled if the number of column repeats and the depth per design feed are prime to one another, but not if they have any factor in common other than unity.

"With 480 needles and a presser of 100 cuts, the first row comes into an adjacent column after one revolution of the cylinder. This is the column in front of the original one in the direction of knitting. It comes into the adjacent column on the opposite side after four revolutions of the machine, since $(4 \times 480) \div 100$ is a plus lap of 20 needles.

"With 660 needles, the first row comes into the adjacent forward column after three revolutions of the cylinder and into the adjacent rear column after two revolutions of the cylinder.

$660 \times 3 = 1980$ $1980 \div 100 =$ minus lap of 20 needles.

$660 \times 2 = 1320$ $1320 \div 100 =$ plus lap of 20 needles.

"Again, with 840 needles, the first row comes into the forward column after two revolutions of the cylinder because $(2 \times 840) \div 100$ is a minus lap of 20 needles; and into the rear column after three revolutions of the cylinder, because $(3 \times 840) \div 100$ is a plus lap of 20 needles.

"In the formula to which you refer x is the number of revolutions of the cylinder and y is the number of revolutions of the presser.

"I would draw your attention to the rules I have given for reading patterns plotted out in rectangular areas, as published in the November, 1936, issue of TEXTILE WORLD [page 83]. Patterns will not be developed in the fabric correctly unless these rules are conformed to in every particular."

Slide-Fastener Tape

Technical Editor:

We are casting about for a market for our product, which is round braided cords, and are interested in the possibility of supplying tapes to the manufacturers of slide or hookless fasteners. Will you kindly give us some idea as to the character of tape used by these manufacturers. (8379)

There are two distinct types of tapes supplied to the manufacturers of slide fasteners. One of these is a plain tape constructed in various forms of the herringbone twill weave. Upon the upper and under side of one edge of this fabric the fastener manufacturer stitches a firmly twisted cord. The other type is constructed complete at the loom with a woven cord or bead at one edge. The type of texture and the size of the bead on this latter fabric varies with the purpose for which the completed fastener is required. The weave may be what is commonly known as the double plain with a binder, and with or without a stuffer warp; or it may be any one of the various herringbone twills. The width of these fabrics varies from $\frac{3}{8}$ to $1\frac{1}{4}$ in.

Yellowing of Silk

Technical Editor:

In your September, 1936, on page 129 second column bottom, 7th line from the bottom, where you have "stockings are yellow," you state, "silk in its natural state yellows with age. This tendency is augmented by throwing oils, lubricating oils, moisture and heat."

At certain times of the year when the full-fashioned business is not so active, it is necessary for us to accumulate a quantity of gray goods; following your reasoning, if these gray goods remain intact for a while, they would turn yellow.

Will you kindly inform us the length of time it would take for these gray goods to disintegrate. Our experience has been that we have accumulated gray goods and let them stay for a period up to 7 yr. without any detrimental effect on the quality of the hose when finished. Will you, therefore, give us more in detail the length of time it would take to turn yellow, the storage place necessary to prevent this, and any other information that you can give us. (8420)

It is generally recognized that oxidization and yellowing of silk occur upon aging. The gums in the silk harden and become more firmly fastened to the fibers, and the silk is, therefore, more difficult to degum. Goods of this character dyed along with fresh stock will usually dye a different shade.

Gray goods stored in a compressed condition also develop distorted patches and creases, which are often difficult to remove in finishing. As a rule, goods kept moving in a continuous process of manufacture from the knitting machine to the finished product give better results.

We would not attempt to say how long it would take for gray goods to disintegrate; and believe that the time depends to a considerable degree on the condition of storage. As an example, a mill with which we are familiar had some special-twist mending silk put up on cones for the menders. Each mender was given a cone of this silk to set on her table. Because of the large quantity and the slow consumption, one cone lasted 2 yr. Before the mill had finished with the silk, it did not have sufficient breaking strength for mending purposes.

On the other hand, when gray goods are properly stored for a reasonable time there is no great danger of disintegration. However, they should not be packed away in dark, damp storage; but should be placed loosely in an airy room in lattice bins or boxes where there is a free circulation of air.

We do not know of any way of preventing gray goods from turning yellow with age. They will turn yellow in an hour if heated to too high a temperature in drying. When dried and stored properly, there usually is a noticeable difference in the color of fresh stock and stock from 30 to 60 days old.

Dyeing Upholstery Fabrics

Technical Editor:

We are manufacturers of pile fabrics for upholstering. There has been a little discussion here among our staff on an interesting subject. It involves the question as to how many dye lots should ordinarily be taken out of a dye tub per 10-hr. day.

We have wooden tanks and we dye various shades each day in each tank. Our operation includes scouring in an open crab and then dyeing and washing in the dye tub. All of our dyeing is done by formula and we have been dyeing the same colors for month after month. Our fabrics weigh on an average approximately 24 oz., being composed of cotton back and filling and the pile is generally mohair or a combination of mohair and cotton.

The contention of one faction is that as a general rule a lot should be dyed and washed on an average of every 2 hr. We realize that there will be times when the cloth won't just come up to an exact match and the dyer would just have to play around for a while. One faction thought that 2 hr. would be sufficient time to bring a lot up to color and the other faction feels that three lots in a day of 10 hr. is maximum per dye kettle as an average, even though formulas have been obtained and are standard for months. (8356)

We assume that you are dyeing the pile separately, having first dyed the cotton foundation warp and filling previous to weaving. We assume this because of the fact that fabrics for upholstery require the fast acid alizarine dyes for fastness to sunlight.

Therefore, with the facts given, specified as a 10-hr. day, your problem is one requiring a time study. On an average, it takes 10 min. to sew cloth around the reel and to prepare the bath with necessary dye and acid; 45 min. to bring the bath up to the necessary temperature of between 200° F. and the boil; 15 min. at this temperature to exhaust colors which ordinarily go on at this heat; 15 min. for one feed-on, as you state that you have a fairly accurate formula; 10 min. to allow the bath to cool down to 170° to permit the yellow to go on (experience has taught that most alizarine yellows require this procedure); another 10 min. for sampling and matching, assuming that no further additions are necessary, 30 min. for a cold-water wash to remove all traces of acid; and 10 min. for unloading the tub. This is a total of 2 hr., 25 min. If the work is so planned that it is not necessary to clean the tub between dyeings, it is possible to get four lots per day.

In union dyeing, it should average 10

min. for loading, 20 min. for heating, to 130°; 20 min. for exhausting; 20 min. for one feeding on; 30 min. for rinsing; 10 min. for unloading. This totals 1 hr., 50 min., making it possible to get five lots per day.

Cross dyeing, of which there is very little done today, is a combination of the two methods outlined and a 10-hour day should give about three batches.

These schedules do not allow any time for cleaning tubs, minor repairs to equipment, or other unavoidable causes of delay. That is, under ideal conditions you should be able to turn out four lots per day; but under actual mill conditions three lots per day is about all you can expect. We suggest that you go into this matter further, making actual time studies in your own plant to determine just how long a time is necessary on an average for the various operations, such as loading the kettle, bringing the temperature of the bath to the proper point, exhausting, washing, etc.

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Stiff Finish of Cotton Fabrics

Technical Editor:

We are inclosing herewith two samples of cotton fabrics which have been given a very stiff finish. We are interested in knowing how this is obtained. (8373)

A finish of this type can be obtained by treating the goods with a very heavy mixture of wheat starch and Swiss gum, together with a smaller amount of sulphonated tallow softener. It probably would require at least 1¼ lb. of wheat starch, 1 lb. of gum, and ¼ lb. of sulphonated tallow softener to each gallon of the mixture. The mixture would be applied in an ordinary starch mangle with not over 70 to 80% pick-up. The goods should be run dry into the mangle and dipped before running through the nip. Next the goods should be half dried on drying cans and then run on a tenter to complete the drying and to stretch the goods to width. It is possible to obtain a permanent finish on this type of fabric by coating it either with a synthetic resin or one of the soluble cellulose derivatives.

Static in Warping Silk

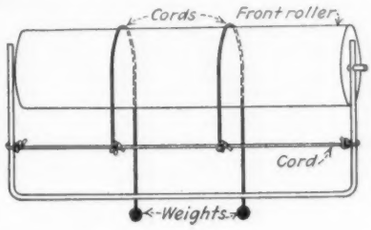
Technical Editor:

The concern which employs me is having trouble in warping its silk. Static is created between the reed and drum and causes the threads to fluff up and cross over one other when tension is eased off during warping. The yarn used is 54/2 spun silk, dyed. I feel sure you will be able to suggest some inexpensive way to overcome our trouble. (8352)

Static in warping silk is commonly experienced. In unsoaked silk it is always present. It frequently appears in soaked silk which is permitted to dry too thoroughly, especially if the mill is hot and dry.

To prevent sections from overlapping, due to this static or wild silk, it is customary for the warper to allow a few dents for the spreading. For example, if each section is to measure 1⅛ in. to give the required width in the warp, and the silk is unusually wild, the section is reeded to measure 1 in., but the section setter remains 1⅛ in. These figures are not a standard to be allowed for all silk that spreads, but they are used here to explain the point. If the space is too large, it must be reduced; and if it is not wide enough to allow for the spread, additional dents must be allotted. The final judgment must be left to the warper.

When working on silk filled with static, it is always good policy to move the front roller as near to the wheel or drum as possible. This eliminates unnecessary freedom of the section between the front roller and the staves of the wheel. It is also advisable to put a bridle on the front roller, as in the accompanying diagram. This helps to prevent the section from creeping while running over the front roller.



Some warpers, as an additional precaution against spreading, place a wet sponge or cloth directly under the front roller. This helps to subdue the wildness of the silk.

With the above-mentioned precautions, overlapped sections should be eliminated. There are, however, two other difficulties often encountered, especially in the warping of the heavier yarns. These are the breaking of ends and the rebounding of the wheel.

When ends tear on these warps, it is not enough to find the end and tie it. These ends have a tendency to fly all over the warp and, if not guided back to their proper place, the section following will overlap. When this occurs, great trouble will frequently be experienced in beaming.

Wheel rebound is usually caused by the greater tension of the heavier yarns. On the lighter yarns, such as 20/22 Japan, the tension on the brake strap of the warping wheel is adjusted to permit the wheel to stop with a forward glide that will keep the ends of the section taut. Without due consideration being given to the tension on the brake strap to offset the added tension and pull of the heavier yarns, the machine will stop more abruptly and react with a slight rebound. The rebound will not be much, it is true; but it will be sufficient to permit a certain amount of spread of the section that is loosened by this condition.

It must be remembered that all precautions do not eliminate static. They only check it sufficiently to permit the silk to be warped without difficulty.

Spinning Cotton Yarn

Technical Editor:

Will you kindly give me a list of the machinery necessary to spin 500 lb. of cotton per day of 10 hr., using middling cotton and producing 14s knitting yarn, single ply. I want to employ the least machinery possible to make a satisfactory yarn. Also, about how much power will be required to drive it? (8402)

We shall lay out a so-called standard organization for you. Of course, a reduction in the number of processes could be effected by the adoption of long drafting, and we recommend that you ask the various machine builders to outline for you what their long-draft systems are capable of doing. Our figures are based on cotton of not less than 1-in. staple and middling grade.

Spinning: Draft of 8, spindle speed of 6,350 to 6,800 r.p.m., 2½-in. ring. For most efficient spinning five spinning frames should be used, even if the fifth has only 100 spindles; but for economy of installation, we are specifying only four frames in the table below.

Intermediate: Draft of 4.3, producing 1.75-hank roving. In the table extra spindles have been allowed.

Slubber: Draft of 4, producing 0.8-hank roving. In the table extra spindles have been allowed.

Drawing: Draft of 6, producing 42-grain sliver. Four extra deliveries of drawing would be practical.

Card: Draft of 100, producing 42-grain sliver. No extra cards needed.

Picker: Producing 10-oz. finished lap for card. This picker should have sufficient opening and cleaning sections to produce a clean and even lap.

The following table shows the types of machines, the number of each, and the approximate horsepowers.

Machines	*Number*	*Approximate Horsepower*
Combination opening and picking (one-process)	1	10
Cards	6	6
Drawing deliveries, one-process	8	2
Slubber, 48-spindle, 10x5	1	1½
Intermediates, 64-spindle, 10x5	2	2
Spinning frames, 204-spindle	4	25
Waste machine, if waste (sliver, roving, etc.) is to be reclaimed	1	3 to 5

Such auxiliary equipment as bobbins, cans, trucks, etc., will also be required.

Union Fabric Is Streaky

Technical Editor:

Inclosed you will find a piece of union fabric. You will note that it is mohair and cotton, probably 20 and 80%. After dyeing, it always comes out quite streaky on the back, sometimes on the face too, but not often. These goods are dyed in the rope form, and are scoured with Diastafor, Gardinol, Accosine, (a wetting agent), and soda ash at 180° F. for ¾ hr. The water is run over until cool and the dyebath set up with Accosine and ¼% of soda ash, brought to boil in 45 min., boiled 15 min., 25% of glauber salt added, run 15 min., steam put on, boiled 10 min. more and patched. The entire dyeing operation takes 2 hr. I have tried scouring with soap at a lower temperature, dyeing at a lower temperature and with common salt, instead of glauber salt, with and without soda ash. The results have not been any better. I have run the goods in the open form, but I still get the bar effects on the back. Is there any way which you can suggest whereby I can elimnate this difficulty? The colors used were an easy leveling type. Erie Fast Brown B, which I use with good results on other materials. (8327)

As the unevenness may be due to resists of lime soap resulting from the scouring, we suggest that you add to the scouring bath as well as to all rinse waters, the proper amount of sodium metaphosphate to prevent the lime from exerting any influence whatever. As long as there is an excess of soap present in the scouring bath, there is little possibility of lime soap formation, but the trouble begins during the rinsing, when the hard water is in excess. Even though no soap was used in the

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scouring bath, the soda and the grease from the fabric itself may supply enough to cause trouble. The ingredients used for scouring are all excellent, but the precaution noted above will give added security.

Even if the goods are perfectly clean before dyeing and are dyed evenly with good leveling dyes, they may develop streaks from the custom of unloading the machine into trucks and allowing the lot to stand for some time before the goods are extracted. Some color always runs out of union goods when they are dyed in heavy shades, no matter how complete the rinse. Therefore, if the goods cannot be extracted at once, some dyers add a little acetic to the last rinse to set the color, allowing for any change in shade by rinsing each sample in weak acid when matching. You can check up on this probable cause of streaks by rushing one piece to the extractor and comparing it with the others which have been piled up for a longer time. This streaky condition has been noticed frequently when dyeing friezes with a mohair face and cotton back. Instead of using union dyes, a good way to dye such goods is to use colors for the cotton that do not dye the mohair, and neutral-dyeing acid colors that have little or no affinity for the cotton for the mohair. Such a procedure will greatly lessen the difficulties of getting perfect matches in the shortest possible time.

Full Fashioned Defects

Technical Editor:

We are inclosing one pair of hose made from 3-thread, 5-turn, 85% Japan. These hose show several defects. Would it be possible for you to examine them and report your findings? (8394)

This sample shows an effort on the part of the manufacturer to produce a stocking to a price rather than to obtain quality.

The first defect noticeable is a dull, linty finish of the mercerized yarn in the welt, heel, and toe. This appears to be a rather poor quality of ungassed, mercerized yarn. Next is evident a chafed or linty appearance of the silk boot. This is cotton lint from the mercerized yarn or the dye nets which has become deposited on the silk.

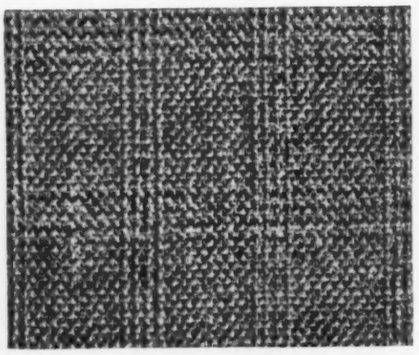
Another very striking defect is the shape of the foot, especially the heel. The toe and heel are much too blunt, due to an insufficient number of needles having been raised in the gore line. The tapered high heel and tapered sole could be designed with a longer, more graceful curve in order to give a more pleasing effect. The finish on the stocking is very poor. It appears that the stock has been overworked in the dyeing machine or has been stripped and redyed.

To sum up, the stocking needs better raw materials, better designing, and better workmanship.

Split Basket Weave

Technical Editor:

We are making a split basket weave as shown in the inclosed layout and sample, and we have trouble with the two colors rolling over each other. For instance, on the one-and-one part, the white will roll over the twist and we get two-and-two parts coming in the one-and-one part, and one-and-one parts in the two-and-two part.



Layout for Split Basket Weave

CONSTRUCTION

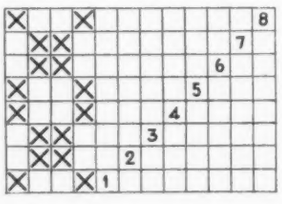
Ends, 3920; Reed 30/double reed; Width in reed, 66.2; Picks, 52

WARP

42		8	4	7	
2/31	White	1	2	1	= 24
	Black	1	2	1	= 23
	Red			1	= 1
					48

FILLING

42		8	4	7	
2/31	White	1	2	1	= 24
	Black	1	2	1	= 23
	Red			1	= 1
					48



Split basket weave—Fabric, layout, weave

As you will notice, we reed this in a double reed; and we should like to know if there is anything further that you can suggest to prevent rolling. We know that there are lots of mills which make these split baskets successfully. These goods are woven on a Crompton & Knowles 4x4-box worsted loom. (8387)

There is only one way of preventing the overlapping of threads in fabrics of this type, and that is by the use of a fine reed. In this particular case a 30 reed, with 2 in dent, is called for. Double reeds have been tried out by nearly all manufacturers, but without success. The objection to using finer reeds, of course, is the tendency to produce bad work and subsequent poor production, but this is the only way to make a genuine split basket without the rolling defect.

Silk Loom Cuts Filling

Technical Editor:

Will you please give me some advice on how to fix the new Crompton & Knowles Super Silk automatic loom for cutting filling at the double box, especially on georgette filling when there is considerable twist. We shall highly appreciate any information and advice. (8348)

This is a broad question, as there are numerous causes for filling breakage.

We assume that the shuttles have been gone over and properly attended to with respect to tension pins, etc., and that you are using good fur. Opossum fur has been found particularly suitable for georgette filling of high twist, as it keeps the filling from snarling.

The next point is to find where the filling breaks, whether at the mouth of the double box or inside the box. It is very likely that it breaks about 3 in. from the mouth of the box.

If the filling breaks right at the mouth, we suggest that you line up the reed perfectly, reduce the pick to a minimum, and check the pick on the off side. Adjust the spindle rod so that, when the shuttle is being thrown from the box side, it has a slight tendency to lean against the reed. Avoid a loose spindle rod and have enough bumper leather on the spindle. Do not have the picker stick fit the picker too snugly, as such a fit has a tendency to lift the shuttle as it leaves the picker.

If the filling breaks inside the box, the swell or binder is probably not shaped just right. It is sometimes best to have the swell bent more to the picker side with a very narrow surface holding the shuttle. Occasionally you will find a swell that has rough edges which can hardly be seen by the naked eye. It is sometimes necessary to bind the entire length of the swell with a leather strip.

Another suggestion: Recheck your temples to see that enough clearance has been given between the lay and reed.

We believe that if you follow these suggestions, you will overcome the difficulty, but if you continue to have trouble, advise us as to what shuttle you are using, its dimensions, the distance of the break from the edge of the cloth, the width of the cloth, and the width of the loom.

• • •

Helpful Devices

Built in southern mills

SEVERAL more homemade gadgets, designed to save the mills time and money, have been noted by TEXTILE WORLD's roving reporter during recent visits to southern plants. Two of these, seen at the Lindale, Ga., plant of Pepperell Mfg. Co., a stripping machine for bad roving and an automatic feed regulator for pickers—were developed by George Hutchins, plant engineer, and were built in the mill shops.

The roving stripper consists essentially of two brass rolls, 5 in. in diameter and nearly 5 ft. long, mounted on a framework as shown in Figs. 1 and 1a. The rolls are placed about 1½ in.

apart, one a little higher than the other. A ½-hp. motor operates them at about 200 r.p.m., though a pulley arrangement.

Bad roving, which is ordinarily stripped by hand—a tedious process—is simply placed on the machine as shown, with an end over the top roll. The revolving rolls quickly and efficiently unroll the roving, with the aid of friction, and pile it in a box, which is pushed away when full and replaced with an empty. The machine can be made in any length desired, within limits, in order to handle larger or smaller quantities of roving. One man is all that is necessary to operate the machine.

Picker Feed

The second development is in the picking room, where Mr. Hutchins, with the aid of the blacksmith, constructed a conveyor system and automatic feed regulator which control the amount of cotton in the hopper of the picker.

The conveyor, which is more or less orthodox, carries the loose cotton to a box, 20 in. square, made of sheet metal and constructed as shown in Fig. 2. The lower end of this box, which extends well down into the hopper of the picker, is built with a lip on one side and a hinged door on the other. The lip is so set as to permit a predetermined amount of cotton to drop into the hopper.

After the cotton reaches a certain level, it begins to back up against the door, causing it to close gradually and constrict the opening. As the spiked apron carries the cotton out of the hopper into the picker, and the level drops, the door again opens to allow more cotton to enter from overhead. The system has been in operation quite a while and is said to be very satisfactory.

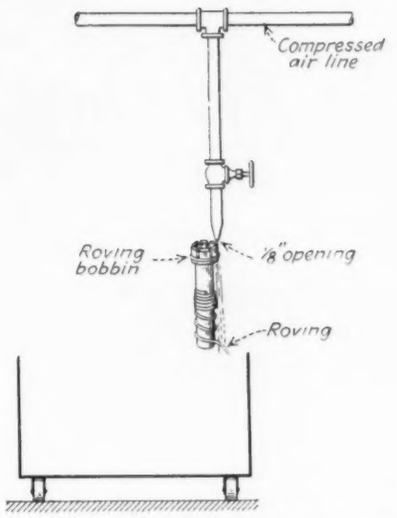


Fig. 4. Compressed-air device for blowing roving off bobbin.

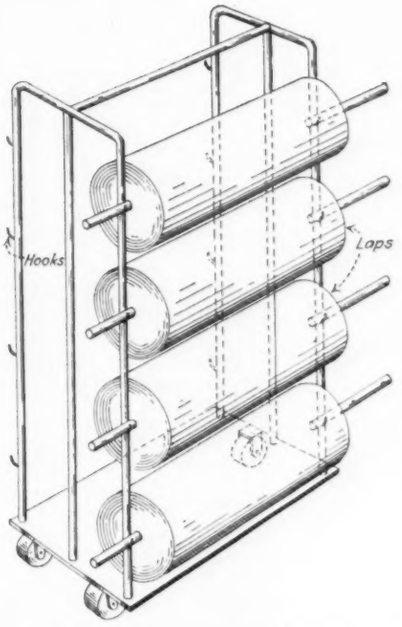


Fig. 3. Truck for hauling or storing picker laps.

Two more interesting devices observed in other mills are: (1) A movable rack for storing picker laps, and (2) a compressed-air contrivance for blowing bad roving off the bobbin.

In many mills, picker laps are doffed on the floor where they remain until some one decides to stack them in a corner or take them to the cards. This handling and moving have a deleterious effect on the quality of the lap. A wheeled truck, such as shown in Fig. 3, can be easily constructed from iron piping. Four hooks on either side, and at each end, accommodate eight laps which are doffed directly from picker to truck. The truck, when full, is pushed directly to the cards, or to a storage room where it is left until needed. The cotton is not taken off the truck until it is placed on the cards. This is not an entirely new idea, as several mills have developed similar devices; but other plants which are still doffing laps in the old way will find it helpful.

Stripping Roving Bobbins

Several mills have found that a single layer of roving left on bobbins can be quickly and efficiently removed by blowing off with compressed air. A nozzle with a small (⅛-in.) opening and valve, as shown in Fig. 4, is attached to the regular mill air line, which usually carries from 60 to 90 lb. pressure. This is dropped perpendicularly from the ceiling to a convenient height for the operator to reach. To operate, a bobbin containing a layer of roving to be removed is placed in approximately the position shown in the drawing. When the air is turned on, the roving is whisked off faster than the eye can detect.

Fig. 1a. Bad-roving stripper in use at Pepperell Mfg. Co. Pulley at left is connected directly to a ½-hp. motor which drives rolls at 200 r.p.m.

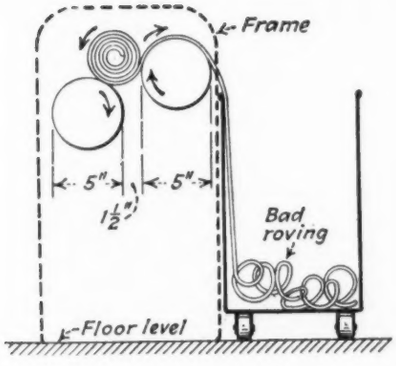


Fig. 1. Stripping machine for bad roving.

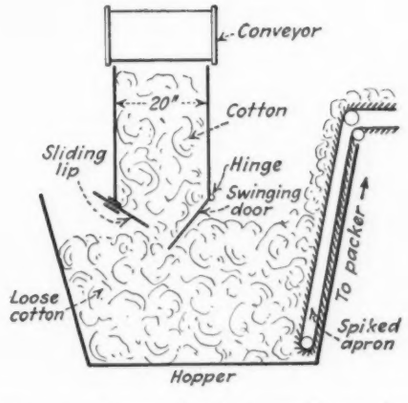


Fig. 2. Automatic feed regulator for picker.

The Overseer's Corner

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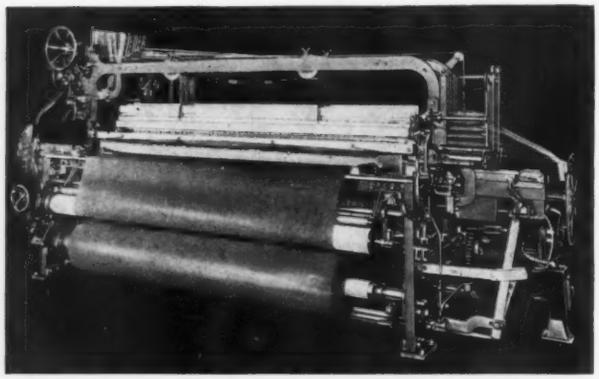
When Shuttles Fly Out

The trouble is likely to be incorrect timing of boxes or misalignment of picker spindles



By Benjamin F. Hayes

ON wool looms the flying out of shuttles is often a serious problem. When it occurs, many loomfixers watch the loom in operation in the hope that they can detect the defect in that manner. It is not the right way to go about it, however, as the loom is too fast for the eye to follow.

Not long ago a young loomfixer told me that he had been troubled for nearly two weeks by shuttles flying out. The loom would sometimes, he said, run a whole day without giving this trouble. On other occasions, he would watch the loom in operation for two hours without seeing anything wrong; and, just as soon as he would leave it to attend to something else, out would come the shuttle.

Boxes Were Late

It was always the first pick from the third box. He had timed the boxes; but, like many loomfixers, had timed them in only one direction—as the boxes were dropping. In this case, however, the first pick from the third box was always when the boxes were rising from second to third. On examination, I found them too late at this point, although the shuttle did not fly out of the second box in spite of the fact that the first pick from that box sometimes came when the boxes were rising from first to second.

So I found that the real cause of the shuttle flying out was a combination of two defects. First, the boxes did not rise early enough. Second, the third box was just one little mite too low.

I raised the third box a trifle and set the top cylinder one tooth forward. Sometimes, to set one cylinder forward or backward, it is necessary to cut out one-half tooth of the bevel gear on the upright shaft, for these gears are designed to mate with each other and can only be mated earlier or later by cutting out one-half a tooth. Mismating of these gears is more likely to occur when they are purchased from other concerns than loom builders.

It is very rare that we find the top cylinder late, but on many occasions I have found the bottom cylinder late. This defect will cause shuttles to fly out, especially if we are making double movement of boxes from three to one, from four to two, etc.

I recall another instance in which a loomfixer was having trouble with the shuttle flying out during the movement of the boxes. I picked the loom over by hand and found that the boxes had not finished their movement early enough. When I told the fixer, he said that the boxes started at the correct time. This was true, but they were not finishing on time. In other words, the movement of the boxes was too slow.

I reset the eccentric, making the largest part of the driving gear, which is the gear on the crankshaft, center with the crank. This is a good position for all purposes, and we cannot deviate to any appreciable extent from it. The result was that, while the boxes did not begin their movement any earlier, they finished their movement much sooner and became thoroughly settled before the picker began to move the shuttle forward.

I have often overcome the trouble of flying shuttles by use of the eccentric, especially when there is a double movement of the boxes. A study of this very important eccentric will help not only the young loomfixer, but many of the old boys as well.

There are many times also when the shuttle will fly out just as soon as the picker has been in use about three weeks. Some fixers get to know looms with this defect and simply put on a new picker at regular intervals. This is an expensive method of fixing looms I always contend that the loomfixer should have a merit system and that every bunch of twelve pickers given to a fixer should be recorded. It is only by keeping records in this manner that we can know just which loomfixers are using pickers and wasting them. Pickers can become a very expensive item.

Mating Picker to Shuttle

Now let us assume that we are attending to a loom which throws out the shuttle when the picker has been in use about three weeks. We take the shuttle that came out and place it firmly against the reed and the inside box guide, holding it firmly in this position. We now press the picker forward until its hole contacts the tip of the shuttle. Now we notice carefully whether the shuttle is moved away from the reed. If the shuttle moves in any way during this experiment, it will fly out.

Instead of replacing the picker with a new one, we can simply bend the picker spindle so that the hole made by the shuttle in the picker will mate perfectly with the shuttle when the latter is just about to leave the box. I do not recommend the bending of the picker spindle, however, as a permanent fix. The next time the warp is out, the lay end should be trued up. For this truing up, I do not recommend the use of a straightedge, as I shall explain in a later article.

Before we had warp stop motions, the shuttles would many times be caused to fly out by broken threads in the shed. Thanks to this very wonderful invention, however, the loom is now stopped just as soon as an end breaks.

MEETINGS AND SUCH—*John Fawcett of New Bedford Textile School spoke on the subject of spun rayon at a meeting of Textile Analysts, Designers, and Technicians Association, held in Fall River, Dec. 12 . . . Silver Line Dye Works, Inc., New York, held its annual dance on Dec. 19, with over 300 attending . . . Regular annual gathering of the overseers of Botany Worsted Mills, Passaic, N. J., was held the evening of Dec. 16 . . . Ralph E. Loper of R. E. Loper Co. compared manufacturing costs of northern and southern mills at a meeting of Textile Associates Club in Fall River, Dec. 26.*

New Machinery and Processes

Power Burling Table

• To aid the burling room operating on one shift to keep up with the production of a mill that has changed over to two- or three-shift operation, Birch Brothers, Inc., Somerville, Mass., has designed a power burling table to speed up the process and to permit the work to be done more thoroughly. The machine is fitted with an adjustable inspection board having a ground-glass panel which is lighted from the back. The top of the inspection board has a device for removing wrinkles from the cloth, and there is a forward and reverse drive controlled by the operator's knee.

The cloth is drawn through the machine by forward and reverse draw rollers, the reverse roller acting as a tension roller when the cloth is moving forward. A feature is that the cloth travels toward the operator. The table is made in all widths, but the usual width is 84 in. Motive power is supplied by a fractional-hp. motor. Several other types of power burling tables are being developed by the company.

Birch Brothers also announce that three more types of ceiling-type power perches are now available, in addition to the one previously manufactured.

Self-Sealed, Feltless Bearing

• Norma-Hoffmann Bearings Corp., Stamford, Conn., announces its new 9000 series of self-sealed precision ball bearings, offered in two types—the 9000-D series, with single side shield, and the 9000-DD series, with two side shields. These bearings employ inwardly extending, closely fitted flanged shields, which do not rotate or contact with rotating seal parts, are equally effective in retaining grease in a horizontal or vertical position and, not being subject to any wear whatsoever, permanently maintain their efficiency. The metal seals clear the recess on the inner ring, obviating the possibility of drag or frictional resistance.

The shields occupy less space within the bearing than the standard felt seal, and the 9000 series has greater grease capacity and a more lasting lubricant supply for long continuous service. In the 9000-DD type, the bearings are totally sealed against the entrance of dirt or foreign matter during assembly, operation, or disassembly.

BOBBIN

Steaming Bobbin

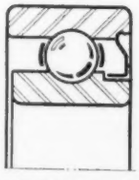
• A steaming bobbin which makes use of the Dardelet Threadlock to secure the heads tightly to the barrel has been developed by Lestershire Spool & Mfg. Co., Johnson City, N. Y. This construction permits the renewal of any part with the minimum of expense. The lock cannot come loose when in use and is said to be of strong construction.

The heads of the spool are made of 18.8 stainless steel, with rolled edges, and are said to be harder than reel caps, thus eliminating the need for using the latter. A slight spring capacity of the head permits expansion and contraction when the bobbin is filled and steamed, and loose yarn after steaming is thus avoided. Because of the low conductivity of the metal, the danger of baking is reduced.

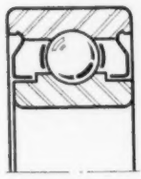
Condensation Eliminator

• Julien P. Friez & Sons, Inc., has developed the Friez Windostat to eliminate condensation on windows where high relative humidity is desired during winter weather. The instrument is placed close

BEARING



"9000-D"



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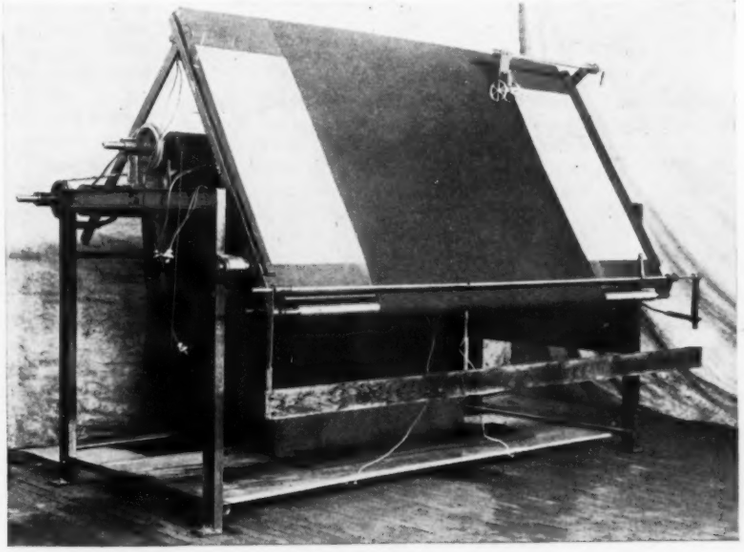
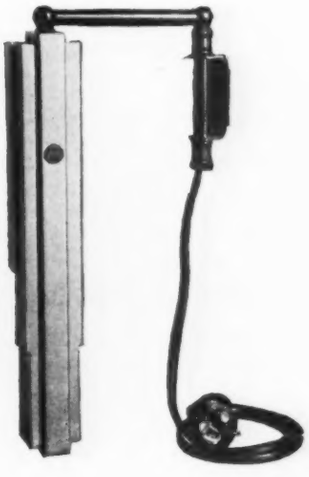
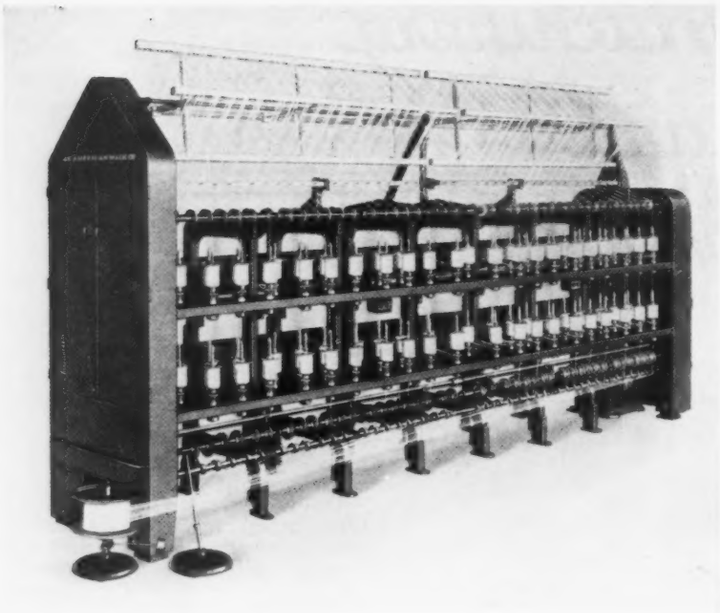


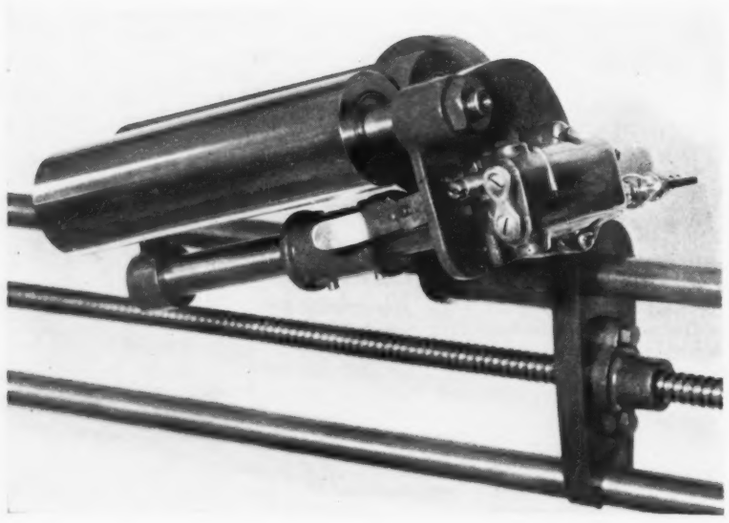
BURLING-TABLE

ELIMINATOR





COVERING MACHINE



GUIDER

to the chilled surface of the window, and is able to detect a dangerously high degree of humidity at that point, such as would shortly result in condensation. When this condition is reached, the Windostat, through its electrical contacts, provides means for over-ruling the ordinary control and shuts down the humidifier until such time as further humidity can be added without condensation. It is stated that the unit allows the highest possible point of humidity to be maintained without condensation.

Rubber-Covering Machine

• Speeds up to 10,000 r.p.m., depending upon conditions, are possible with the new machine which H. & B. American Machine Co., Pawtucket, R. I., has developed for covering any size of rubber thread. In operation, each rubber thread delivers from the main spool or beam supply, is wrapped twice around the draw-off wheel, and is then carried up through a double deck of spindles. The lower spindle, which usually runs about 30% faster than the upper spindle, covers the rubber thread with a clockwise layer, while the upper spindle covers the thread with a counter-clockwise layer. The covered thread then wraps twice around the take-off wheel and is wound in skeins, or on spools or warp beams. The difference in the speeds of the draw-off wheel and of the take-up wheel determines the elongation of the finished yarn, which may be set for any desired degree within the limitation of the raw material.

Production varies according to the size of the rubber thread, but a typical performance is a production of 30 lb. from a machine handling 40 strands of 112s rubber.

Construction features are as follows: individual, 5-hp. motor drive; all gears totally inclosed in the head end and readily accessible; free-running, ball-bearing, hollow spindles; cast-iron spindle rails with rugged flanges; split driving shaft with flexible couplings to facilitate removal; feed- and take-up wheels designed to prevent slipping of the yarn; variable-speed, V-belt drive; driving mechanism totally inclosed in foot end; aluminum arms on reels to minimize weight; adjustable shoes on ends and on each samson for level.

Air Cloth Guider

• Improvements have been made to the air guider manufactured by Guider Specialty Co., P. O. Box 82, Westville Sta., New Haven, Conn. Among the changes are the following: The selvage finger is now made from heavy-gage stainless steel; the frame which supports the fixed roll, and to which the air-valve mechanism is attached, is so constructed that it guards the fabric from any water or oil that might be present in the air line; the valve gate is heavier than in the old model, and the surface of the valve gate slot is machined; the spring which controls the tension of the selvage finger is adjustable, so that any degree of tension can be applied to the finger to take care of various weights of fabrics and different speeds; the bracket which carries the movable rubber nip roll is designed so that it is impossible to jam the bearings when a replacement roll is installed; the cross-feed screw for opening and closing the guiders has been redesigned so that it can be installed readily to convenient uprights which are available on most textile machines.

The guiders are suitable for use on a wide variety of fabrics and under various operating conditions. They are commonly used for guiding fabric into batching machines, tenter frames, soapers, etc., and are also used on printing machines for guiding backgrays directly to printing cylinders, thus obviating the necessity of batching backgrays. Guiders operating in bleach houses are opening goods from the rope form into mangles at a speed of 165 yd. per minute.

Recorder Chart

• Meter charts which last three years are being offered by Permochart Corp., 295 Madison Ave., New York. The charts have a smooth, hard surface, and when a set of recordings has been made the pen marks are simply rubbed off with a damp cloth and the chart continued in use. Permocharts are non-inflammable and waterproof.

Heat-Indicating Paint

• Paints that change color when exposed to a certain degree of heat are now being offered by Efkalin Co., 804 East 141st St., New York. Some Efkalin colors will turn back to the original color when cooled, while others remain permanently changed. They are used to detect any serious deviation in temperature in processing equipment, power machinery transmissions, etc. The exterior of bearings, for example, can be painted and any overheating detected by a change in color.

A series of five permanent changes and seven retroactive color paints are available. The former change at temperatures rang-

ing from 300 to 734° F., and the latter from 122 to 464° F., with a safety margin of 25° F.

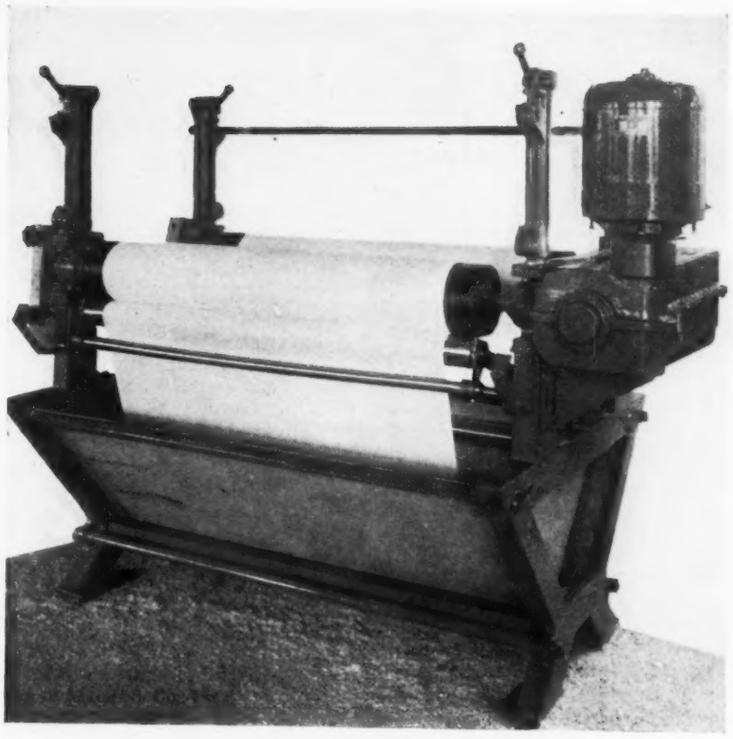
Dye Reel and Jig

• Hinnekins Machine Co., Inc., 199 Godwin Ave., Paterson, N. J., has brought out two new machines for finishing—one a stainless-steel dye reel, and the other a stainless-steel jig.

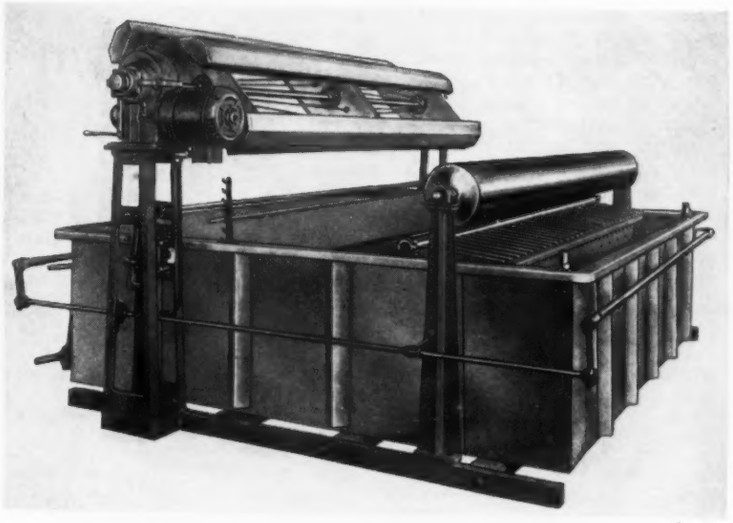
The series 300 dye reels have the following features: dyehouse impregnated motor directly connected to a reducing gear with hardened and ground worm; heat-treated and ground clutch; motor coupling of hardened steel mounted on self-locking bearings; framework separated from the tub and braced to stand rigid on the floor; all parts coming in contact with the liquor, such as the reel, boiling-off pipe, baffle board, color board, and unloading board are made of stainless steel; electric-welded outlet and rubber plug.

Construction features of the jig are as follows: single, 1-hp. motor drive through worm gear; 7-in. rubber rolls driven by cut steel bevel gears; roller bearings on rubber rolls; stainless-steel ball bearings on submerging rolls; stainless-steel, self-aligning, submerging-roll brackets; electric-welded stainless-steel tub with flange and rubber plug; cast-iron frame; mechanism running in oil; double-friction clutch with light starting torque to prevent tension and jerking of goods in starting; tension clamps of wood; cast-iron batch-up stands and square bar; and stainless-steel floating expander with ball bearings and necessary brackets. The tub is 50 in. long, 39 in. wide at the top, 10 in. wide at the bottom, 17 in. deep, and has a capacity of approximately 90 gal.

JIG

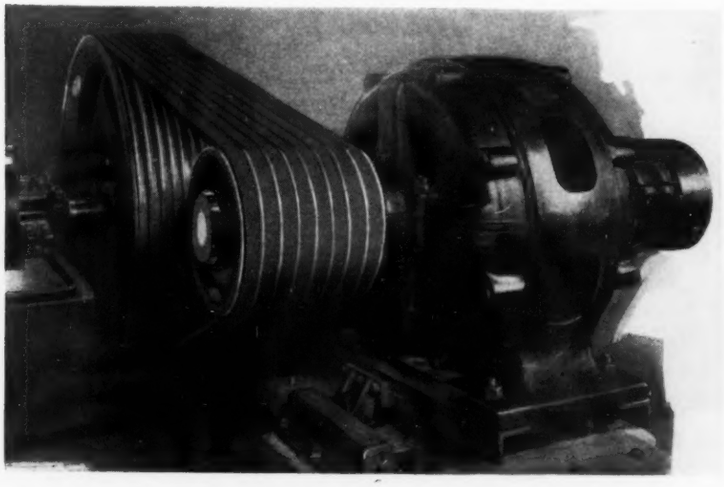


DYE REEL



V-Belt Drive With Pivoted Motor Base

• Rockwood Mfg. Co., Indianapolis, Ind., is now bringing out its V-belt drives on its pivoted motor base. Use of the pivoted motor base (described in TEXTILE WORLD, January, 1934) is stated to maintain constant tension on the belts and thus prevent slipping, glazing, and excessive wear. The belt stretch is automatically taken up and when the drive is not running the tension is removed from the belts and they can "rest." The manufacturer states that



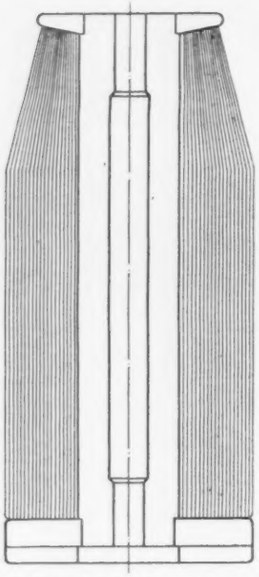
DRIVE

V-belt life can be increased about 50%. The bases can be purchased separately to use with existing V-belt drives, and it is a simple matter to raise the present motor, slide the base into place, bolt the base to the floor, and bolt the motor to the base.

Taper-Top Twister Bobbins

• With the object of reducing winding or warping costs, Saco-Lowell Shops, 147 Milk St., Boston, have designed an attachment that will produce a partial taper-top wind on twisters. The attachment may be applied to twisters with either the cross-shaft or longitudinal-shaft traverse motion, and a button-head spool is used.

The taper-top wind has the advantage of making it possible to unwind the bobbins at the next process by means of an over-



TAPER-TOP BOBBIN

end draw. The yarn speed that is practical with this system is much greater than would be possible with a side draw. Other advantages cited are that the yarn is under a uniform tension during the entire rewinding process and that there is a considerable reduction in the amount of thread waste that is caused when unwinding over end from a double-headed spool. The taper-top wind also makes it possible to take large-size twister bobbins directly from the twister to the warper creel (if equipped with suitable tension devices) and thus eliminate the necessity of an extra winding process. In one mill, it was found that operatives winding from 6-in., double-headed spools could handle only 14 spindles, while operatives handling the taper-top bobbins could tend 60 thus cutting labor cost 60%.

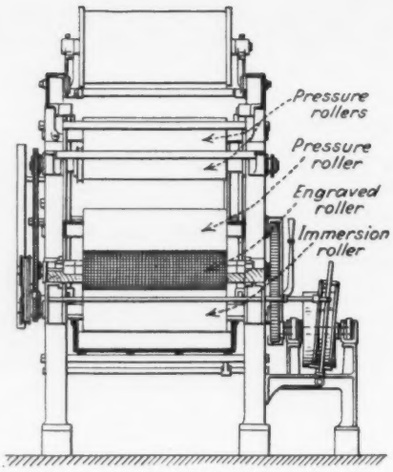
Cloth Tension Control

• Uniform control of cloth tension in the winding operation by hooking up a variable-speed unit with a dancer roll is being featured by New Departure Mfg. Co., Bristol, Conn. The method can also be employed in range finishing. The company's variable-speed unit, known as Transitorq, was described in TEXTILE WORLD, May, 1935.

Finishing Equipment

• Several pieces of equipment of interest to the finishing industry have been developed by Custers & Co., M. Gladbach (Rhld.), Germany. One is a new machine in which the finishing liquor is brought into the back of the fabric, by means of engraved rolls, without the face being moistened at all. The object is to secure better dye effects and better quality. Drying production is speeded up also and can be effected at a low temperature. According to the manufacturer, a fabric weighing 44 lb. will absorb about 19 qt. of liquor in the usual finishing process, while the same hand can be obtained with the new machine by using 6.4 qt. or less of a suitable concentrated liquor. In the wet finishing of wash goods, the finishing is likewise done with a concentrated liquor and the face of the fabric remains dry. The machine has three moistening rolls and two pressure rolls which assist in pressing the liquid into the cloth when heavy fabrics are being run. One or more drying cylinders can be furnished.

For the finishing of various calendered fabrics, the company has developed a special machine of the same type which forces a thick liquid bath into the fabric and



FINISHER

produces a heavier hand than would be obtained by sprinkling.

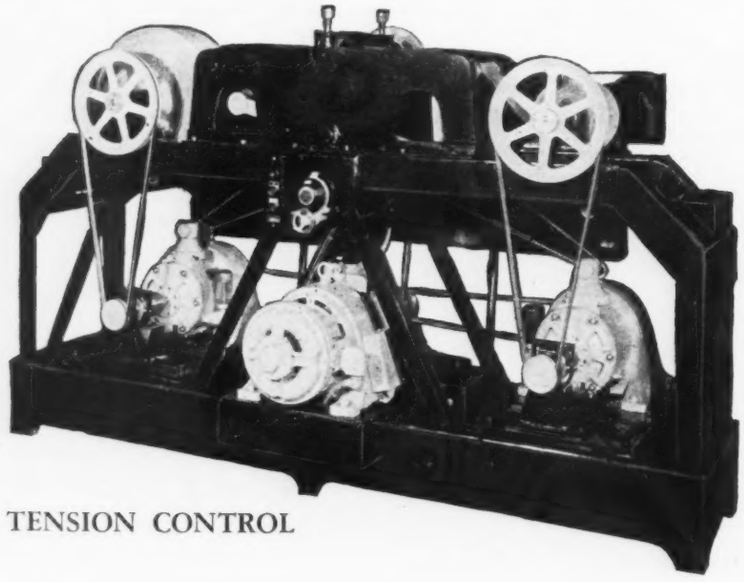
Another development is a special machine for pasting together, smoothing, and drying two plies of fabric in one operation. The paste liquor is applied by an engraved roller without a doctor, and both fabrics remain dry on the outside.

The company has also designed a cooling and moistening machine in which the hot fabric is cooled by a refrigerating unit.

NEW DYES & CHEMICALS

Solublized Sulphur Blacks

• Development of a complete range of water-soluble sulphur black dyes has been announced recently by Calco Chemical Co., Inc., Bound Brook, N. J. With these new Calcogene Blacks, it is possible to reduce materially the amount of sodium sulphide required for dyeing. It is stated that this results in a lower dyeing cost and at the same time minimizes the danger of free color deposit when dyeing in pressure machines. With the exception of the smaller amount of sodium sulphide required, the same general method of application is recommended as for the older types of Calcogene Blacks.



TENSION CONTROL

Non-Slip Finish

• Appretan SF, a new product for imparting a non-slip finish to rayon fabrics, has been placed on the market recently by General Dyestuff Corp., 230 Fifth Ave., New York. This material is said to bind together the warp and filling yarns with a soft, elastic film and thus prevent them from pulling apart or slipping. It can be applied on a padder or on a reel dyeing machine, and is miscible with most of the usual sizing agents with the exception of Epsom salt. Usually from 30 to 75 lb. of Appretan SF to 100 gal. of the finishing solution is required to obtain a satisfactory non-slip finish.

Crepe Soaking Compounds

• Three new products for use in soaking rayon crepe yarns have been announced recently by E. F. Houghton & Co., 240 West Somerset St., Philadelphia. The products, known under the generic term of Raylubric P C, have been developed to make possible definite and uniform control of degree of pebble in rayon crepes.

Raylubric P C 1, produces a fine pebble; it is a stiff, firm, grayish colored jell, soluble in hot water. Raylubric P C 2 produces a medium pebble; it is a soft, straw-colored paste readily soluble in hot water. Raylubric P C 3 produces a heavy pebble; it is a liquid at room temperatures, dissolving in hot water to make a milky emulsion.

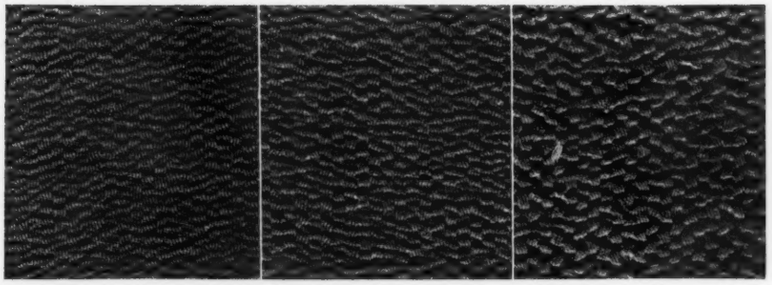
Raylubric P C products are said to be free from impurities or materials which

would tend to turn rancid, putrefy, mildew, or produce an unpleasant odor in the finished fabric. It is stated also that they are economical in their use and provide a soaking bath that costs no more than compounded mixtures often used for soaking crepe. They can be applied in any customary type of soaking equipment.

"Ionised" Oils

• "Ionised" oils, a series of fiber lubricants and detergents, produced by H.-G. Products Ltd., Brentford, England, are now being made available in this country with the appointment of John H. Ross, 80 Wall St., New York, as sole agent for the manufacturer in the United States. "Ionised" oils are comprised mainly of blends of vegetable oils which are sulphonated, treated electrolytically, and impregnated with ozone. The various types of oils obtained range from clear fluids to semi-solid pastes, depending on the nature of the raw material. They are all said to have the following common properties: readily miscible with water, light in color, non-oxidizing and non-inflammable, possess detergent and wetting-out properties, have a softening effect on animal and vegetable fibers, will emulsify with other oils, have antiseptic and fungicidal properties.

Among the applications for which the various "Ionised" oils are recommended by the manufacturer are the following: warp sizing of rayon, fiber lubricants in woolen and worsted spinning, scouring of raw wool, delustering rayon and silk, retting and degumming bast fibers, kier boiling of cotton, finishing cotton fabrics, and showerproofing various fabrics.



Types of pebble produced by Raylubric PC1, PC2, and PC3, respectively.

NEW PUBLICATIONS

Sand Castle; by Janet Beith; Frederick A. Stokes Co., New York; $2.50.

This is another addition to the rapidly growing ranks of textile novels. Perhaps it would be more accurate to call this a novel with a textile background since Manchester and the English cotton industry are the setting rather than an important phase of the story itself. To this reviewer, this is in the book's favor rather than otherwise.

"Sand Castle" is Miss Beith's second novel, the first having been the prize novel "No Second Spring." The story is an appealing one and the characters are clearly projected. It is an interesting novel for anyone to read; its Lancashire setting makes it a particularly interesting novel for textile men to read.

Rich Land, Poor Land; by Stuart Chase; Whittlesey House, McGraw-Hill Book Co., Inc., New York; $2.50.

This is one of the most important of recent books. It presents first a bird's-eye view of America before the coming of the white man—a picture of a vast continent, luxurious with forests, brooks and rivers, a land rich in bird, fish, and animal life, a country of enormous mineral wealth.

The scene shifts to 1936, to a land laid waste, and resources of every kind assaulted by the profligate spirit of the pioneer. On all sides one sees the tragedy of the continental forests, water erosion, the destruction by water pollution and floods, the toll of mineral and power exploitation.

The need of a national plan for conservation becomes self-evident, and Mr. Chase reviews the story of this movement, with special reference to the work of the TVA and CCC. Our responsibility to future generations and the opportunity to solve, in part, our present unemployment problem are presented as an obligation to all Americans and one that rises above political considerations.

The Romance of French Weaving; by Paul Rodier; Frederick A. Stokes Co., New York; $10.00.

Although this is not a brand new book, it has not yet been reviewed in these columns, and we feel that textile men should know about it.

The author is the head of the great house of Rodier, internationally-known manufacturers of hand-woven fabrics. The book is a rich and beautiful one on the romantic history of French weavers and their royal patrons, from the time of Caesar to Napoleon. It is both fascinating and informing, the result of a vast amount of devoted study, enthusiastic exploration in French archives, and practical experience with the art treasures of French textiles, both historic and modern. It is written with individuality and charm, and is beautifully illustrated.

Textile manufacturers will find that a reading of this book will enrich their own concept of their calling.

1936 Annual Cotton Handbook; Comtelburo, Ltd., New York; $1.00.

This handbook covers daily cable records of American, East Indian, Egyptian, Sudan and other crops, together with Liverpool, Manchester, Continental, Brazilian and other statistics. It is a most valuable reference book for all concerned with the cotton trade.

BUSINESS NEWS

• **American Cyanamid & Chemical Corp.** has purchased **Charles H. Stone, Inc.,** Charlotte, N. C., for "considerations in excess of $250,000." Mr. Stone himself goes with American Cyanamid as Charlotte district production manager. Paul Haddock, southern sales manager for Cyanamid, remains with the expanded organization in the same capacity. No changes are to be made in personnel of either organization. The Charlotte office will be maintained at 822 West Morehead St.

• **Commercial Investment Trust Corp.,** New York, has acquired all the stock of **Bachmann-Emmerich & Co., Inc.** The business will be conducted under the name Bachmann-Emmerich Factors Corp., operating as an independent unit of Commercial Factors Corp., a wholly owned C.I.T. subsidiary. The business will continue at 200 Madison Ave., with I. Edwin Goldwasser, president and Treasurer; David Jacobson, vice-president and secretary; Charles Reiss, vice-president. Other officers are George Becker, vice-president; I. D. Bachmann, assistant vice-president; Louis Rothstein and Jack Perl, assistant secretaries.

• **Celluloid Corp.,** New York, George H. Boehmer, general sales manager, announces that because of substantial increase in sales of Protectoid and Lumarith and other products, its sales organization in the past year has almost been doubled. E. W. Ward, who a year ago was transferred from Chicago District Manager to become director of sales of the Packaging Division, has now been promoted to a newly created post of Assistant General Sales Manager. Mr. Ward has been with the company since 1921. D. S. Hopping has been promoted to succeed Mr. Ward as Director of Sales of the Packaging Division.

• **Thermoid Rubber Co.,** Trenton, N. J., has enlarged its mechanical rubber goods division to offer more thorough personalized service to distributors. This move has been accomplished through the addition of three new district supervisors. George W. Skirm has been appointed district manager in the Indiana territory, H. C. Griffen in the New York territory and S. S. Tower in New England.

• **Bristol's Instrument Co.,** Ltd., London, England, has moved into a larger establishment at Brent Crescent, North Circular Rd., West Twyford. The move is part of an expansion program which is being followed by the associated companies, The Bristol Co. of Canada, Ltd.,

Toronto, Canada, and The Bristol Co., Waterbury, Conn.

• **Carrier Corp.** reports an eleven months' net profit of $463,675.96, against a gross operating loss for the whole of 1935 of $584,745.83, which operating loss was reduced to a net loss of $335,062.67 through the sale of interests in foreign subsidiaries at a profit of $249,683.16.

• **Gaston County Dye Machinery Co.**, Stanley, N. C., has increased equipment because of heavy increase in business. The capital stock has been increased from $50,000 to $100,000.

• **Commercial Investment Trust Corp.** has completed acquisition of stock of National Surety Corp. by paying the balance of the purchase price of $10,031,000 in cash to Superintendent Pink of the New York Insurance Department and taking delivery of the stock. Commercial Investment Trust Corp. will immediately increase capital of National Surety Corp. to $2,500,000 by paying into the treasury $1,500,000 cash for additional capital stock at par.

• **U. S. Bobbin & Shuttle Co.**, Lawrence, Mass., will move its Manchester, N. H., unit to Lawrence shortly. The Manchester unit includes the main office, which will be located in the former Watson Shoe Co. building in Lawrence.

• **Textile Chemical Products Co.**, Greensboro, N. C., is moving into a new location on the High Point road known as the Carolina Body Plant in order to secure more manufacturing space, according to Joseph R. Morton, head of the firm. The new plant will provide 30,000 sq.ft. of floor space on the same floor after extensive alterations and improvements are made. The laboratory will be expanded, and facilities for sulphonation and the manufacture of various specialties will be enlarged. S. V. Valjavec, who graduated in chemistry from Columbia University, will be in charge of the laboratory.

Du Pont Enlarges Technical Dye Laboratory

TO make possible more efficient testing of dyes and more comprehensive treatment of problems presented by the textile industry, E. I. du Pont de Nemours & Co., has recently enlarged its Technical Laboratory, at Deepwater Point, N. J. On Dec. 15, a group of editors of textile publications visited the laboratory for the purpose of observing at first hand the work which is being carried out. Preceding the tour of the building, Dr. Robert E. Rose, director of the laboratory, explained briefly the organization and function of the laboratory, and Ambrose Chantler, director of dye sales, outlined the progress which is being made in the manufacture and sales of fast dyes.

Among the various functions of the technical laboratory are included the standardization of dyes, as to strength, shade, fastness, and other properties; the testing of all new dyes before they are placed on the market, both to determine their fastness properties and dyeing characteristics; the examination of competitive products; the matching of shades and solution of other application problems submitted by textile mills; and the preparation of color cards and other technical material.

In addition to apparatus for making the usual types of laboratory tests, facilities are available for applying and testing dyes under actual conditions encountered in the textile, paper, and leather industries. A section of the textile laboratory is shown in the accompanying illustration. The fact that over 250 chemists and other technicians are employed in the technical laboratory gives some idea as to its size and importance.

Part of the equipment in the textile section of the Technical Laboratory, Dyestuffs Division, E. I. du Pont de Nemours & Co., at Deepwater Point, N. J. In addition to the hydro-extractors and package dyeing machines shown in the illustration, the laboratory contains rawstock machines, jigs, padders, printing machines, agers, and dryers, with which dyes can be applied under conditions simulating those encountered in the textile-mill dyehouse.

Hal W. Field, of Atlanta, Ga., has been added to the sales organization and will cover Georgia, Alabama and Mississippi; Cato M. Littlejohn, of Charlotte, N. C., will devote his time to the hosiery trade in North Carolina; Claude Harris, of Washington, N. J., will continue to cover the Pennsylvania-New Jersey territory but will add New England to his itinerary. Textile Chemical Products Co., was organized in 1931 by Mr. Morton and J. D. Pell, of Rocky Mount, Va.

• **Sherwin-Williams Co.** has set up an Industrial and Transportation Color Service under the direction of R. H. Hookway, Sherwin-Williams colorist. This new department combines its efforts with those of the S-W Paint Engineering Service to offer designers, manufacturers and industrial consultants assistance not only in developing desired colors and combinations for "dressing up" new or old products, but also information on types of finishes and their suitability for specific uses.

• **Lincoln Electric Co.**, Cleveland, Ohio, announces that Robert Daniels has been placed in charge of the Chattanooga (Tenn.) office of the company. He has been with the company in sales work since April, 1934, and is thoroughly schooled in the practical aspects of arc welding, having worked four years as a welder for the Chicago Bridge and Iron Works, and in addition holding a B.S. degree in Mechanical Engineering.

• **Newport** (Vt.) **Bobbin Co., Inc.**, has been incorporated to manufacture bobbins and is headed by Mayor John L. Bradley, as president, with L. J. Needleman, vice-president; O. S. Searles, treasurer; H. S. Pierce, clerk. Thomas Cookson is plant manager. Capacity is 7,500 bobbins daily.

• **SKF Industries, Inc.**, Philadelphia, announces that Henry P. Goodwin, formerly with Dunean Mills, Greenville, S. C., has been added to the textile sales division of the Atlanta, Ga., district. Mr. Goodwin graduated from the Clemson textile school in 1932.

• **General Electric Co.** has elected five new commercial vice presidents as follows: M. O. Troy of Schenectady, manager of central station department; L. T. Blaisdell of Dallas, southwestern district manager; E. H. Ginn of Atlanta, southeastern district manager; A. L. Jones of Denver, Rocky Mountain district manager; T. S. Knight of Boston, New England district manager.

• **Allis-Chalmers Mfg. Co.**, Milwaukee, Wis., announces that its subsidiary company, Condit Electrical Mfg. Corp., Boston, Mass., will be operated as a company unit after Jan. 1, 1937. After that date the plant will be known as Allis-Chalmers Mfg. Co.-Condit Works. The address is 1344 Hyde Park Avenue, Boston, Mass. The plant will continue to specialize in switchgear products as a division of the Electrical Department under R. S. Fleshiem, manager. The personnel, with headquarters at Hyde Park, will be as follows: George A. Burnham, assistant manager of the Electrical Department in charge of sales and engineering; W. S. Edsall, manager of sales; H. V. Nye, engineer in charge; Frank W. Young, works manager.

The Personal Page

Roy E. Tilles, vice-president, Gotham Silk Hosiery Co., has been elected president, succeeding **Solon E. Summerfield,** who assumes the newly created office of chairman of the board. **Francis J. Moeckel,** secretary, succeeds Mr. Tilles as vice-president, and **Abraham Spiro,** company counsel, succeeds Mr. Moeckel as secretary. **S. B. Cumming,** controller, becomes treasurer.

George A. Urlaub, formerly with Louis Hirsch Textile Machines, Inc., and prior to that having had extended textile experience with Roxford Knitting Co., of Philadelphia, Tubize Artificial Silk Co., predecessor of Tubize Chatillon Corp., and other firms, has been appointed executive director of Throwsters Research Institute. He succeeds **H. E. Bishop,** resigned.

W. T. Cheatham will cover the North Carolina and Virginia territory for Aberfoyle Mfg. Co., making his headquarters at Security Bank Bldg., Burlington, N. C. He will be assisted by **Walter C. Brown.** North and South Carolina will be covered by **W. H. Crenshaw,** with headquarters at Belmont, N. C.

B. Preston Clark has been elected president of Plymouth (Mass.) Cordage Co., succeeding **Augustus P. Loring** who retired after serving since 1897.

H. B. Jennings has been elected president of Ada McLean Cotton Mills, Lumberton, N. C., formerly National Cotton Mills. Other officers are **Dr. G. M. Pate,** vice-president and **R. C. Adams,** secretary and treasurer.

James W. Cassidy has been elected president of Old Town (Me.) Woolen Co., Inc., to succeed **Maurice H. Gray,** and **Williard H. Cummings** has succeeded **Herbert Gray** as treasurer and general manager.

B. F. Hapgood, president and treasurer of Glenwood Cotton Mills, Easley, S. C., and of Pickens (S.C.) Mills, and **M. L. Cates,** treasurer of Arkwright Mills, Spartanburg, S. C., have been elected directors of the Cotton-Textile Institute.

Morton Dowling, H. D. Dwyer, Arthur M. Flanders, Col. G. Eric Reid, and **H. Stern** have been elected directors of Bruck Silk Mills, Ltd., Montreal, Can.

Alfred Tucker has been elected president, **Jake Tucker,** vice-president, and **W. P. Harvelle,** secretary, treasurer and general manager, of Stanfield Hosiery Mill, recently organized at Stanfield, N. C.

J. Douglas Newall has been appointed agent in charge of operations of Boston Duck Co. and Bondsville Bleachery & Dye Works, both located in Bondsville, Mass. and controlled by Otis Co., Ware. **William G. Stainton** has been made superintendent of the Otis mill at Ware. **Thomas Hunter** of Three Rivers will be the new superintendent at Bondsville Mills and **Carlos Bradley** will be the assistant superintendent.

Iser Peter Cohen, president of Cohen Bros. Corp., and president also of the Knitwear Institute, was the guest of honor, Dec. 20, at a testimonial dinner of the knitted outerwear industry, at the Hotel Astor, New York. The event, one of the largest of the kind ever held in the outerwear field, brought together 600 leading manufacturers and their wives. Mr. Cohen, who is credited with having been mainly responsible for the outerwear industry's recent improvement, through his promotional leadership, was praised by numerous prominent speakers.

Theodore Wood, director of adververtising of American Bemberg Corp., has been appointed director of advertising of North American Rayon Corp., also. **John J. Merlein** will continue, as heretofore, in the position of advertising manager of North American Rayon Corp. under Mr. Wood.

Franklin R. Hoadley, formerly president of Farrell-Birmingham Corp., Ansonia, Conn., is now president of Atwood Machine Co., Stonington.

Edwin F. James, Charlotte, N. C., who has been president of Carolina Dyeing & Winding, Inc., Mount Holly, N. C., has resigned to become associated with Sylvanic, Inc., 122 East 42d St., New York, which has developed a new cellulose compound for use in producing permanent finishes.

B. S. Hawkins has resigned as president and treasurer of Guerin Mills, Inc., Woonsocket, R. I., and will become treasurer of Merrimack Mfg. Co., Lowell, Mass., effective Feb. 1. His position at Guerin Mills has been filled by **John H. Lacoutre,** who has been with the company for many years.

Iser Peter Cohen

Theodore Wood

Franklin R. Hoadley

Edwin F. James

***EARLE MAULDIN,** prominently known engineer identified with the southern textile industry for 30 years, has joined the staff of* **Textile World** *Jan. 1 as a southern editor, with headquarters at 1105 Rhodes-Haverty Bldg., Atlanta, Ga. William G. Ashmore, who also is a southern editor, will continue to make his headquarters at 312 Woodside Bldg., Greenville, S. C. Mr. Mauldin is probably best known in the textile industry through his long connection with J. E. Sirrine & Co., engineers, at Greenville, and also through his service for many years as manager of the Southern Textile Exposition. During his connection with the Sirrine organization, he worked in most departments of the company, his final assignment being in capacity of contact man charged with keeping in touch with all active contracts. He left that company in 1925 and since then has been associated as vice-president and general manager of Welch, Mauldin & Sneed, of Greenville, S. C.; as engineer for the Park Mfg. Co., Charlotte, N. C.; as sales-engineer for the General Electric Vapor Lamp Co., working out of Atlanta, Ga.; and most recently with Johns-Manville, in the Greensboro-Durham area of North Carolina. Mr. Mauldin's long experience and wide acquaintance in the textile industry will be of benefit to readers of* **Textile World.** *This appointment is part of this publication's policy in developing its editorial sources and contacts in the southern textile area.*

Lincoln Baylies has resigned as assistant treasurer of Naumkeag Steam Cotton Co., Salem, Mass. Mr. Baylies was formerly associated with Nashua Mfg. Co. and prior to that was a partner in the old firm of Amory, Browne & Co.

Robert T. Stevens, president of J. P. Stevens Co., New York, has been elected a director of Whitney Chain & Mfg. Co., Hartford, Conn. **Carl A. Gray,** formerly vice-president of Capewell Mfg. Co., has been named vice-president in charge of production and engineering for Whitney Chain.

John Ferguson, who has been secretary-treasurer of Novelty Piece Dye Works, Paterson, N. J., has been elected president to succeed the late Jean Strengs.

Henry C. Harden, at one time agent of the old Great Falls Mfg. Co., Somersworth, N. H., has been named superintendent of the Manchester, N. H., division of Chicopee Mfg. Co.

Frank O. Lathrop has been elected secretary and a director of Fall River (Mass.) Bleachery, succeeding his father, **George O. Lathrop,** who has retired after 63 years of employment in the company.

E. A. Thompson, vice-president and sales manager of Norwich (N. Y.) Knitting Co., has resigned and formed E. A. Thompson & Co., sales representatives, 93 Worth St., New York. **C. F. Roman** will be associated with Mr. Thompson.

G. W. Peach has been appointed master mechanic at the Lando, S. C., unit of Manetta Mills. He was formerly at Monroe, N. C.

Joe A. Farmer, assistant treasurer of Gossett Mills, Anderson, S. C., has been elected vice-president.

H. W. Burton of Moss Rose Mfg. Co. has been elected president of National

Upholstery & Drapery Textile Association.

Robert H. Chapman, for the last eighteen years with J. E. Sirrine & Co., Greenville, S. C., has joined the executive staff of Inman (S. C.) Mills. Mr. Chapman is the son of the late James A. Chapman, formerly president of the mill.

David H. Judson, who for two years has been employed as foreman for United Rayon Mills, Fall River, Mass., has obtained a position with the Hitchcock & Curtis Knitting Co., Hartford, Conn.

Frederick Robinson, after serving as overseer of weaving at Soule Mill, New Bedford, Mass., for the last year, has returned to a similar position at the Nashawena Mills in that city, which has recently reopened after being closed down.

Tom Brown has been promoted to vice-president and general manager of Autovent Fan & Blower Co., Chicago, while **George J. Kalwitz** has been promoted from sales engineer to general sales manager. **Robert F. Ruggles,** who has been manager of the New York office for the last few years, has been advanced to the position of Eastern Division Manager.

M. B. Bowman, superintendent of Slingsby Mfg. Co., Brantford, Ont., will become resident manager of the Beaverbrook mill of American Woolen Co., Lowell, Mass.

S. J. Adams, formerly assistant superintendent at Judson Mills, Greenville, S. C., has resigned to become superintendent of Spencer Mills, Inc., Spindale, N. C.

James J. Hackett has joined Scheuer & Co., New York, where he will specialize in cotton print cloths and sheetings. Mr. Hackett was associated for the past seven years with Pope & Earley, Inc.

S. J. Adams has become superintendent of the Spindale, N. C., plant of Spencer Mills. He was formerly assistant superintendent of Judson Mills, Greenville, S. C.

J. B. Boyter has become superintendent of the yarn department of Fitzgerald (Ga.) Cotton Mills.

T. T. Pitts has become overseer of weaving at Griffin (Ga.) Mills.

J. A. Baugh, Jr., has been appointed general manager of the Marlboro Cotton Mills, McColl, S. C., succeeding **P. A. Gwaltney,** who was elevated to the presidency some time ago. Mr. Baugh was formerly general manager for the Gastonia, N. C., plant of Manville Jenckes Corp.

Max R. Cramer has joined Jeandros Dye & Print Works, New Bedford, Mass., as plant manager and director of sales.

Wallace G. Stewart and **Alfred A. Jones** are now representing Fall River (Mass.) Bleachery in the New York market, replacing Charles A. Rice, who resigned.

Hamilton Gaddes has opened a New York office at 320 Broadway for Narragansett Finishing Co., Westerly, R. I.

Textile Calendar

- Wholesale Dry Goods Institute, annual meeting, Hotel New Yorker, New York, Jan. 27 and 28, 1937.
- Boston Wool Trade Association, annual dinner, Statler Hotel, Boston, Feb. 4, 1937.
- Hosiery industry meeting, Waldorf-Astoria Hotel, New York, Feb. 11 and 12, 1937.
- National Assn. of Wool Manufacturers, annual meeting, Hotel Commodore, New York, Feb. 17, 1937.
- Committee D-13, A.S.T.M., meeting, Providence, R. I., Mar. 10 to 12, 1937.
- Twelfth Southern Textile Exposition, Textile Hall, Greenville, S. C., April 5 to 10, 1937.
- Southern Textile Association, meeting during show week in Greenville, S. C., April 9, 1937.
- Knitting Arts Exhibition, Commercial Museum, Philadelphia, April 19 to 23, 1937.

Hugh Patrick, superintendent of Union Bleachery, Greenville, S. C., has been promoted to general superintendent of the company. **H. R. Mathewson** succeeds Mr. Patrick as superintendent.

Henry C. Harden, former agent of Great Falls Mfg. Co., Somersworth, N. H., has been appointed superintendent of the new plant of the Chicopee (Mass.) Mfg. Co., Manchester, N. H.

C. G. White was elected secretary of Startex Mills, Tucupau, S. C.

G. H. Hatcker, formerly agent at Stanley, N. C., for Katterman & Mitchell Co., has resigned to become vice-president of Gaston County Dye Machinery Co., Stanley. He has been succeeded by **Ed. Gardner.**

Joe T. Fry has been promoted from overseer of weaving at Enterprise Mfg. Co., Augusta, Ga., to superintendent of Sibley Mfg. Co., of the same town. **D. R. Senn** is general superintendent of the two mills.

James E. McDougal, who has been representing Smith-Drum Co., Philadelphia, in the Pennsylvania territory, has been promoted to southern manager with headquarters at Charlotte, N. C. He succeeds **Robert Howerton** who has resigned to join the sales staff of Calco Chemical Co.

James F. Bruner, cloth-room overseer at Oconee Textiles, Inc., has been made plant superintendent and assistant to his father, **J. M. Bruner,** treasurer of the company.

William D. Carter, who for the last 20 years has served an superintendent and in executive capacities at Carolina Cotton & Woolen Mills Co., Spray, N. C., is now superintendent of Susquehanna Silk Mills, Sunbury, Pa.

C. J. Ashmore, superintendent of Sibley Mfg. Co., Augusta, Ga., has resigned.

J. W. Wiley, Greensboro, N. C., who has served as a news correspondent for TEXTILE WORLD, for the last ten years, celebrated his 70th birthday on Dec. 18 and reports that he feels like a man of 40.

Gerald R. Brophy has been added to the development and research staff of International Nickel Co. at the laboratory in Bayonne, N. J.

Thomas H. Cole, Jr., has resigned as office manager of the Boston Duck Mills (Otis Co.), Bondsville, Mass., to become office manager for Barnes Textile Associates, consulting engineers, Boston.

Emerson B. Tifft, resident manager of Beebe River, N. H., plant of Draper Corp. has been appointed assistant superintendent of Draper factories in Hopedale, Mass. **Jack Locke** will succeed him, and **Leon Parker** will take Mr. Locke's place.

C. M. Powell has been appointed sales representative for the H. & B. American Machine Co., Pawtucket, R. I., with headquarters in the Johnston Bldg., Charlotte, N. C. Mr. Powell, formerly served as superintendent of the Cabarrus Mills unit of Cannon Mills Co.

J. J. Reutlinger of Hatch & Reutlinger, New York, has resigned from the firm to engage in the manufacturing of silk and rayon fabrics in Lima, Peru. Hatch Textile Research, Inc., has been organized to continue the business as fabric technicians and consultants with **Herbert H. Hatch** as president.

Albert Sawyer, formerly of Brampton Woolen Co., Newport, N. H. is superintendent at Pondville Woolen Mills, Auburn, Mass.

D. A. Stancill is now superintendent of Cascade Rayon Mills, Mooresville, N. C. He was formerly overseer of weaving at Judson Mills, Greenville, S. C.

S. A. Roane, with Barnes Textile Associates of Boston for the last eight years, has been made southern representative of J. S. Fallow & Co., New Bedford, Mass. He has opened offices at 209 Franklin Life Bldg., Greenville, S. C., from where he will handle a number of lines of textile equipment.

Obituary

James A. Chapman, aged 73, president and treasurer of Inman (S. C.) Mills, died last month at his home in Spartanburg, S. C. He was one of the pioneers in the southern textile industry, having organized and built Inman about 1900. At the time of his death, he also was head of Riverdale Mills, Enoree, S. C. Mr. Chapman, a native of Spartanburg, practiced law in New York for three years after graduating from Harvard Law School, following which he served in a number of executive capacities in the textile industry.

Amos Homer Ragan, aged 60, secretary and treasurer of Ragan Knitting Co., Thomasville, N. C., died recently following a paralytic stroke. Besides actively directing the firm bearing his name, he was one of the principal owners of Maurice Mills Co., of the same town.

John Lee Nelson, aged 84, retired

textile manufacturer and pioneer merchant, died at his Lenoir, N. C., home last month after a five-year illness. He was formerly secretary and treasurer of Lenoir Cotton Mill, Moore Cotton Mills Co., Nelson Cotton Mill Co., Whitnel Cotton Mill Co., Caldwell Cotton Mill Co., and Hudson Cotton Mfg. Co., all in the vicinity of Lenoir.

Jesse G. Iler, aged 57, well-known textile salesman, died last month at Charlotte, N. C., following a short illness. He was the son of James F. Iler, who helped start up Piedmont (S. C.) Mfg. Co. in 1874 and who served as superintendent for more than 25 years, and a brother of H. H. Iler, plant engineer of Union Bleachery, Greenville, S. C.

G. R. Gibson, for many years general manager of Champlain Silk Mills, Whitehall, N. Y., died Dec. 12.

Nathaniel P. Angle, aged 75, president of Angle Silk Mills, Inc., Rocky Mount, Va., died Dec. 23.

Howard J. Stieb, aged 46, vice-president of John P. Maguire & Co., Inc., New York, died at his home in Scarsdale, N. Y., on Dec. 13.

Warren Haycook. associated with Sipp-Eastwood Corp., Paterson, N.J., died suddenly at his home in Haledon, N. J., November 28.

Leonard Johnson, aged 69, formerly superintendent of textile mills at Fall River, New Bedford and Easthampton, Mass., died at Centreville, R. I., on Dec. 14. He retired from business in 1926.

Peter H. Van Horn, aged 43, former president National Federation of Textiles, was killed Dec. 18, in an automobile accident at Palm Beach, Fla. Mr. Van Horn was born at Logan, Ohio, educated at Ohio State University and University of California, and 1926-1934 was associated with the Better Business Bureaus. In 1934 he resigned as president of the National Association of Better Business Bureaus to become managing director of the Silk Association of America. He reorganized the Silk Association into the National Federation of Textiles, Inc., and played a leading part in movements to coordinate the different branches of the silk and rayon textile industry. He headed the silk code authority under NRA. He was granted six months leave of absence by the Federation last July, and resigned as president two weeks before his death.

A. Clark Bacon, aged 70, one of the founders of Allentown (Pa.) Bobbin Works, died on Dec. 4.

James T. Gardner, aged 78, for 28 years manager of the Anniston (Ala.) Yarn Mills, until his retirement about eight years ago, died early in December at Anniston.

David Nusbaum, aged 74, founder and former president, D. Nusbaum & Co., and for 40 years a leader in knitted outerwear, died Dec. 24, in Washington, D. C.

Rignal W. Baldwin, aged 67, president and treasurer of Marion (N.C.) Mfg. Co., died on Jan. 3.

Henry Blood, aged 76, vice-president and treasurer of John Blood & Co., Philadelphia, died Jan. 7.

Andrew W. Hamilton, aged 42, vice-president and credit manager of Commercial Factors Corp., New York, died at his home in Pelham, N. Y., Dec. 20.

Robert E. Godfrey, aged 65, manager of the percale and wash goods departments of Arthur Beir & Co., New York, died on Dec. 11.

Charles A. Eddy, aged 83, for 35 years paymaster of Universal Winding Co., Providence, R. I., died on Nov. 23.

Walter T. Lacross of Hill & Lacross Co., Providence, R. I., died at his home there on Nov. 23.

Charles V-R Ryer, aged 63, until a year ago in charge of the New York office of Nashua Mfg. Co., died on Dec. 16.

Zebulon Vance Martin, aged 64, overseer at Arlington Mills Co., Inc., Gastonia, N. C., died Dec. 4.

John S. Merchant, aged 63, president of Standard Mill Supply Co., Providence, R. I., died in Providence on Dec. 23.

Textile World Analyst

TEXTILE WORLD'S index of textile mill activity shows that the rate during the first 11 months of 1936 was 16% above that for corresponding period of 1935, and 18% above corresponding period of a year in the 1924-31 average. . . . This relationship should hold, approximately, for the year as a whole. . . . Profit possibilities continued to broaden; it will be noted for example that average manufacturing margins on carded cotton fabrics and yarns in December were again well up from November, and that the current level is the best since comparable records have been available—that is, since August, 1933.

Textile World's Price Index Numbers

STARTING with January, 1936, TEXTILE WORLD has revised its price index numbers to a 1923-25 base, to correspond with current statistical practices. Those who wish to continue with indices based on July 1, 1914, for chart purposes or otherwise, can secure conversion factors to change the new figures to the old by writing TEXTILE WORLD, Statistical Dept., 1427 Statler Bldg., Boston, Mass. Figures on cotton manufacturers, Aug. 1, 1933 to Jan. 6, 1936 include processing tax.

	Cotton Index Numbers				Wool Index Numbers				Silk Index	Rayon
Date	Cotton	Yarns	Gray	Colored	Wool	Tops	Yarns	Cloth	Raw-Silk	Index
1923-25	100	100	100	100	100	100	100	100	100	100
1930 ave.	50	61	61	72	58	61	72	90	109	46
1931 ave.	32	68	46	59	46	49	59	71	32	32
1932 ave.	24	37	37	60	36	40	52	57	21	28
1933 ave.	39	56	55	50	53	59	62	80	21	26
1934 ave.	61	67	70	62	63	70	75	91	17	25
1935 ave.	60	68	67	69	56	58	70	88	22	24
July 1935	61	68	65	69	56	59	70	89	20	23
Aug. 1935	58	68	66	69	56	59	70	89	23	24
Sept. 1935	55	66	68	69	58	60	70	89	25	24
Oct. 1935	57	68	68	69	60	61	73	92	27	24
Nov. 1935	60	70	69	72	62	65	75	92	27	24
Dec. 1935	60	71	69	72	64	66	76	92	26	24
Jan. 1936	48	67	63	68	67	73	75	93	26	24
Feb. 1936	42	62	58	67	72	81	77	93	24	24
Mar. 1936	42	61	57	66	73	81	77	93	23	24
Apr. 1936	43	60	55	64	68	75	76	90	22	24
May 1936	43	57	54	64	67	75	76	90	21	24
June 1936	44	58	57	65	67	75	76	90	20	25
July 1936	48	61	61	70	69	75	75	90	22	26
Aug. 1936	45	62	63	70	70	75	74	90	23	26
Sept. 1936	45	62	63	70	70	75	74	90	22	26
Oct. 1936	45	64	67	71	71	75	74	92	23	26
Nov. 1936	45	65	74	72	78	82	76	100	26	26
Dec. 1936	48	77	80	74	87	90	84	105	26	26

Fabric and yarn manufacturing margins follow:

TABLE I. CARDED FABRIC MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933..	21.4	October, 1935..	17.7
October, 1933..	19.1	November, 1935.	16.4
January, 1934	18.4	December, 1935.	16.2
April, 1934...	17.6	January, 1936..	17.2
July, 1934....	15.5	February, 1936.	16.5
August, 1934..	16.6	March, 1936...	15.5
September, 1934	18.6	April, 1936....	14.3
October, 1934..	17.4	May, 1936.....	14.3
November, 1934.	15.8	June, 1936.....	15.3
December, 1934.	16.2	July, 1936.....	16.9
January, 1935..	16.2	August, 1936..	18.0
February, 1935.	16.0	September, 1936	18.4
March, 1935...	15.9	October, 1936..	21.2
April, 1935....	16.1	November, 1936	25.4
May, 1935.....	16.0	December, 1936.	28.1
June, 1935.....	16.5	Dec. 2 ..	28.4
July, 1935....	15.2	Dec. 9 ..	28.2
August, 1935...	17.1	Dec. 16 ..	28.2
September, 1935	17.9	Dec. 23 ..	28.0
		Dec. 30 ..	27.5

TABLE II. CARDED YARN MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933...	23.5	October, 1935..	15.8
October, 1933..	20.0	November, 1935.	16.3
January, 1934..	18.3	December, 1935.	16.3
April, 1934....	15.9	January, 1936..	18.4
July, 1934.....	14.7	February, 1936.	17.5
August, 1934...	15.3	March, 1936...	16.3
September, 1934	15.6	April, 1936....	15.6
October, 1934..	14.6	May, 1936.....	14.8
November, 1934.	13.5	June, 1936.....	14.6
December, 1934.	13.5	July, 1936.....	15.0
January, 1935..	13.5	August, 1936..	16.5
February, 1935.	13.9	September, 1936	16.5
March, 1935...	14.4	October, 1936..	17.2
April, 1935....	14.1	November, 1936	18.0
May, 1935.....	13.8	December, 1936.	20.6
June, 1935.....	14.5	Dec. 2 ..	20.0
July, 1935.....	14.3	Dec. 9 ..	20.2
August, 1935..	15.3	Dec. 16 ..	21.0
September, 1935	15.4	Dec. 23 ..	21.1
		Dec. 30 ..	20.8

Cotton Digest

DECISION of the carded yarn group to effect a closer organization represents one of the most important steps taken by this branch of the industry in years. As pointed out in Charlotte when this decision was reached, the industry is in excellent statistical position but has not been able to get the margins to which it is entitled. An effective organization to serve as a medium for statistical information and education is the answer in such a situation. The carded yarn group can learn a lesson from the combed yarn section; the job done by the Southern Combed Yarn Spinners Association has been an outstanding one. In fact, to this observer it would seem logical that sooner or later these two groups should operate through one organization. Competitive obstacles are few, whereas mutuality of interest is great. We suggest this as a subject for study.—*Editor.*

•

Reminiscent of AAA uncertainty, contract clauses are again the style in Worth St. The Association of Cotton Textile Merchants recently recorded its approval of a clause to be inserted in futures contracts to the effect that price is subject to adjustment if cost is influenced by Federal or State legislation. Significant feature is that a basis (10% of contract price) is established from which adjustments can be measured.

•

"I think 1937 will be a boom year in textiles," again asserted William D. Anderson, chairman of the board of Dibb Mfg. Co., Macon, Ga., in his latest letter to customers and stockholders. The "Bishop of Georgia" has been preaching this sermon since early fall, and his predictions so far have been true. He does not believe the goods market for some time will be much affected by small fluctuations in the cotton market. However, he does think there may be a shortage of 1⅛in. and longer staple before the new crop, necessitating reopening the 12c loan.

•

J. P. Stevens & Co., New York, has become the sole selling agent for the following mills: Highland Park Mfg. Co., Charlotte, N. C., ginghams, chambrays, shirtings, suitings and fancy dress goods; Brown Mfg. Co., Concord, N. C., outings, mottled flannels and interlinings; Cornelius Cotton Mills Cornelius, N. C., suitings and slack materials.

Reorganization of the Carded Yarn Group of the Cotton-Textile Institute took place at a recent meeting in Charlotte, N. C., attended by 45% of the leaders in the carded-yarn industry. Don P. Johnston, of Wake Forest, N. C., was elected general chairman. An executive committee to work with the general chairman, consisting of a chairman from each State, was elected as follows: S. H. Lander, Anderson, S. C.; W. N. Banks, Grantville, Ga.; A. K. Winget, Albemarle, N. C.; B. B. Comer, Sylacauga, Ala.; and Philip Dana, Westbrook, Me. Mr. Comer represents Mississippi in addition to the State in which he lives, and Mr. Dana represents the entire New England area. Dr. Claudius T. Murchison, president of the Cotton-Textile Institute, attending the meeting, said that the purpose of the association is to work for standardization of trade practices and protection of the mills financial interests from State and Federal regulatory legislation. The leaders expressed determination to preserve the essential features of the old NRA code.

•

Cotton gray goods market held well during December despite a slight seasonal slackening around the Christmas holiday period. Prices remained firm. There was considerable activity for May and June, and large orders of goods for industrial purposes were bought for July to December. Printcloths continued outstanding, with spot 38½-in., 5.35-yd., 64x60s selling strong at 8c. May and June sold at 7 to 7¼c.

•

Cotton yarn market experienced another excellent month. Customers complained of high prices, but actually prices are very much in line, considering the spinner's risk in booking forward business. Carded and combed counts held strong, with practically no yarn available for the first few weeks of 1937.

•

Raw cotton market was treated to a taste of old times last month when two young New Orleans traders, anticipating a shortage, attempted to pull a squeeze by demanding delivery on December futures bought several months earlier. Last reports were that the pair made a neat sum out of the deal.

•

Student Loan Plan—A student loan fund will be established by a group of southern cotton-textile manufacturers acting under the auspices of the American Cotton Manufacturers Association. Thomas H. Webb, Concord, N. C., is expected to become president of the fund, which will be managed by a board of five directors elected at the annual meeting of the association. Incorporators are Robert R. West, Danville, Va.; P. E. Glenn, Atlanta, Ga.; Comer Jennings, Eufaula, Ala.; and Mr. Webb. Another member will be selected to represent South Carolina, after which details of organization will be completed and a charter obtained.

•

"Committee for the Increased Use of American Cotton by 1,500,000 Bales Annually" is said to be writing manufacturers in various sections of the country soliciting donations. The National Better Business Bureau reports that the "committee" appears to be a one-man enterprise operated by F. A. Fisher, Jr., of Anniston, Ala., who represents himself as secretary-manager.

•

Hussey & Holmes, cloth brokers, have been organized in New York by George Hussey and Ralph J. Holmes. The new firm succeeds Lowinson & Hussey, 40 Worth St., and will continue at the same address.

•

Key cotton prices of Jan. 4 with comparisons:

	Jan. 4 1937	Dec. 1 1936	Jan. 2 1936	Jan. 2 1935
Spot Cotton N. Y.	12.91	12.58	12.20	12.85
Ditto, high previous month.	13.11	12.43	12.35	12.85
Ditto, low previous month.	11.56	12.08	11.65	12.65
10s hosiery cones	29	28½	29½	.28
10s/2 carded skeirs	29½	28½	29c	.27½
20s/2 carded peeler warps.	34½	32½	32c	.38
60s/2 combed peeler warps.	62	60	59c	.58
60s/2 mercerized cones	75	72	72c	.70
37 in., 3-yd. drill	9¼	9¼	9¼–10c	9¼
38½-in. 64x60s	7 7/16	7 7/16	6¾	6¾
36-in. 4-yd. 56x60s	8½	8¼	8¼c	7⅞
Denim, 2.20s	15	15	15½c	15

•

Statistics of interest to cotton manufacturers on mill operations and the raw material situation follow:

	Nov.	Oct.
Spindle activity (% capacity)	129.9%	123.3%
Ditto in million spindle hours	7,997	8,328
Cotton Consumed	626,695	646,499
Cotton Exported	689,815	861,016
Cotton Imported	8,945	9,944
Cotton ginned to Dec. 1 (thousand bales)	11,494	10,766

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Cotton

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TEXTILE WORLD'S

Wool Digest

NOW that the Christmas season is over, we feel we can suggest caution as to wool goods prices, without being labeled a kill-joy. When raw wool goes up 20% in a month, with some grades 40% above a year ago; and when fabrics advance an average of about 15% from the opening—with high-priced worsteds going up as much as 42½¢—the situation would seem to bear watching. Here is the important point: Price jags should not be overdone, particularly at a time when so many good substitute fibers are at hand to compete with wool if and when the latter gets too high for the popular ranges where volume business is done.—*Editor.*

•

Higher Clothing Prices Ahead—At present writing the advances made early in December by most firms in the fabric market, are the last in a series of three to four jumps which brought price levels 15 to 20% above opening figures. This gain, which places fabrics 20c to 40c per yard above the season's start, means an increase of $1.95 to $2.25 per suit in men's clothing after allowing for the various items of pyramiding which must be taken into account. Obviously, the chains which sell at retail around $20.00 must soon go to $22.50. Further rises of 5 to 10c hit goods Jan. 11.

•

Raw Material Background of Rise—The advance in fabrics has been led by advance in wools and yarns with the result that mills which failed to cover on raw materials beyond their immediate needs early in the season, have been forced to the most extreme advances without the accompanying opportunity for profit shared by the more fortunate firms. Many sorts of wool are in short supply on the domestic market and traders say the foreign market will control domestic levels more than usually, until the next domestic clip comes in.

•

First Offerings for Fall, 1937—Mackinaws have been priced about 20c a yard higher than prices of a year ago. This is modest enough considering the background and a good business is expected.

•

Woe to the Shorts!—Buyers of fabrics have been caught short of spring goods just as mills were caught short of wool. Women's wear lines for spring became very active after the first advance but many buyers covered before the second advance. Some cutters have been buying men's wear worsteds for use in women's tailored suits. Most spot demand for fabrics has gone to jobbers, as mills are sold out of stocks. After the December advances the men's wear market quieted down with mills sold three to four months ahead on an average and disposed to sit back and wait.

•

Military Wool Needs a Booster—December series of London wool sales were 10 to 35% higher than the September series. The lower grades of crossbreds scored the greatest advances. Military needs are named as an important factor in boosting world wool.

•

Wool Stocks Light—Stock of apparel wools in this country as reported by New York Wool Top Exchange were 253,000,000 lb on Dec. 1, or 34.6% less than average of last 10 years and the lowest recorded since 1920.

•

Wool continued to rise at start of the new year. Fleece wools showed great strength and scoured pulled wools rose sharply. Wool byproducts and wastes shared in the upward movement. Heavy imports of wool noils occurred in December. Japan's entrance into the Australian market at the beginning of the year resulted in a sharp advance of 7½% establishing a new high for the season.

•

Annual Meeting—The N.A.W.M. will hold its annual meeting on Feb. 17 at Hotel Commodore, New York.

•

Makes Lastex Woolens—Passaic Woolflex Mfg. Co., Paterson, N. J., has appointed James Talcott, Inc., as factor. The firm manufactures Lastex woolen fabrics.

•

Carpets and Rugs Higher—Not only have apparel fabrics advanced with the upward surge of business during the last three months but carpets and rugs and mohair upholstery fabrics have shared the rise with December advances of 5 to 7% on top of initial advances in November.

•

Weekly Wage Basis Back to 1929—National Association of Wool Mfrs. points out that the recent 10% increase in wages brings full time weekly earnings back to the 1929 level. According to the association there were decreases of 10% and 22½% respectively in October, 1931, and June, 1932. There were increases of 12½% and 10% respectively in May and August of 1933 and an increase of 5% in August, 1934, before the most recent one. Of course it took a 48-hour week to earn the wages in 1929 against 40 hours for the same return in 1936.

•

Another F.T.C. Report—The last half of 1935 gave higher return to woolen and worsted textile companies on their investment than any other half year period since Jan. 1, 1933, except the last half of 1933, according to report of F.T.C. covering 258 companies. Spinning companies netted 4.39% against 1.08% in first half of year; weaving companies, 3.8 against 3.1; combined spinning and weaving, 5.49 against 2.58; dyeing and finishing, 4.69 against a loss of 3.43.

•

Tops at New High—Spot tops on the New York Exchange reached $1.25 on Dec. 18, a gain of about 5c from the first of the month and a gain of 25c over a six-week period. On Jan. 12 spot tops reached $1.31.

•

Fabric Information Bureau—A central bureau of information on important current fabrics produced by member mills is being set up by Associated Wool Industries, according to W. K. Porzer, general director. It starts with a collection of fabrics for spring in the women's wear field and it will later expand to include men's wear. Promotion of men's wear by **wardrobe,** not **suit,** selling is planned by F. B. Todd.

•

Key wool prices of Jan. 4, a month ago, and the last two years:

	Jan 4 1937	Dec. 1 1936	Jan. 2 1936	Jan. 2 1935
Fine and fine med. territory	$1.06	$1.02	$0.78	$0.72½
Ohio ⅜s	.51	.47	.38½	.28½
Tops fine 64–66s	1.35	1.30	1.04	.91
average ⅜s	1.15	1.10	.91	.76½
high ½	1.10	1.02	.84	.69
Noils, fine	.83	.75	.66½	.52
½	.65	.60	.51	.40
2-40s 60s wstd yarn	1.85	1.75	1.49	1.36½
8020 serge	2.15	2.05	1.90	Not quoted

•

Current statistics on wool consumption and mill activity:

	Nov.	Oct.
Wool consumed clean equiv.	(4 weeks)	(5 weeks)
Apparel wool, lbs	24,020,000	25,900,000
Carpet wool, lbs	9,968,000	11,660,000
Machinery activity (40 *hr. shift*)		
Looms (50"and wider)	103.3%	91.0%
Carpet looms	80.5%	83.7%
Combs	135.3%	119.9%
Worsted spindles	103.4%	92.6%
Woolen spindles	123.0%	115.3%

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Wool

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TEXTILE WORLD'S

Rayon & Silk Digest

IF the reaction of our own particular circle of friends is a fair sample, the rayon industry got a lot of valuable publicity through the Beaux Arts Ball in New York last month. The progressive move of a group of yarn producers in having this year's ball made into a Fete de Rayon, with trimmings, has helped to advance the prestige of synthetic fibers. More important still, it was a demonstration of cooperative action which is always heartening.—*Editor.*

•

No Lull in Rayon Yarns—Rayon yarn demand continued strong, holiday interruptions notwithstanding. Indications pointed to a somewhat lower volume for December—but only because stocks were lacking to fill orders. Producers deprecated market reports of possible price advance.

•

Raw Silk Easier—Upward trend of raw silk, which had been steady for some months, showed definite signs of abating last month. Exchanged quoted crack double extra 13-15 white 78% at $1.93-$1.95 on Dec. 22 against $1.94 to $1.96 on Dec. 1. Knitters and weavers bought actively through a month marked by sharp price fluctuations.

•

Viscose Co. Output Sets Record—The Viscose Co. announced Dec. 21 that, despite serious interruptions due to the March, 1936, flood, the company's output of yarn totalled nearly 100,000,000 lb for the year. This sets an individual company record for the entire rayon yarn industry. Flood damage had closed the Lewistown, Pa., plant for three months, causing a 6,000,000 lb production loss.

•

Cheney Nets $90,000—In stating that Cheney Bros., silk manufacturers, of South Manchester, Conn., will require additional time to present its reorganization plan under 77-B to the Federal Court, Ward Cheney, president, made known Dec. 21, that the company netted $90,000 profit in the first 11 months of 1936. The reorganization delay is due to filing amendments in connection with an RFC loan.

•

Unionization Drive Starts—A campaign to organize the synthetic yarn industry of the south was started Jan. 1, according to a statement by F. J. Gorman, first vice-president, U.T.W. The drive concentrates on North Carolina, Tennessee, Virginia and Georgia, where many rayon manufacturing plants are located.

•

New Bemberg List—Curent price list, American Bemberg Corp., including 1c to 10c advances on certain deniers, follows:

Denier	No Twist Skeins	Converted
40	$1.30	$1.40
50	1.20	1.25
65	1.05	1.05
65	1.05	1.10
100	.80	unchanged
120	.70	unchanged

•

Spun Rayons Advertised as "Warm"—Rayon merchandisers who have long held off claiming warmth for spun rayon fabrics, believing that such claim might be open to challenge, expressed keen interest in a spun rayon underwear promotion conducted by R. H. Macy & Co., New York. Macy's promotion described the spun rayon garments as "lightweight and warm".

•

For Fabric Identification—A plan to educate consumers to ask fiber identity of fabrics being bought in stores, is under consideration by the N. Y. City Federation of Women's Clubs. The Federation also hopes to get the Federal Trade Commission to act on the question.

•

Staple Fiber's Big Jump—Staple fiber consumption in the U. S. totaled 25,000,000 lb. in 1936, against 6,000,000 lb. in 1935, a 300% gain, **Textile Organon** reports in its January issue. The figures speak for themselves.

•

Another Name for Staple—E. Whitworth of Saylesville, R. I., suggests Stapray, based on the suggestion Staray offered by another reader of TEXTILE WORLD.

•

British Rayon Consumption Shifts—Figures for the July-September quarter of 1936 show that of the total viscose-acetate yarn output, 63.5% went to weavers against 30.3% to knitters; this compares with 59.8% weavers and 34.2% knitters in the preceding quarter. Acetate's use in knitwear rose from 6.4% in the earlier period to 7.4% in the July-September quarter.

•

All Aboard for Celanese!—Something new in style shows was the fashion display staged by the Celanese Corp. of America, on board the "Orange Blossom", crack Florida train, in Pennsylvania station, New York, Dec. 10. The show highlighted winter resort fashions.

•

Big Jump in Rayon Fabric Deliveries—Rayon broad woven cloth deliveries in November, 1936, were nearly double the monthly average for 1934, it is announced by the National Rayon Weavers Association. Index figures follow:

1934 = 100	Sept. 1936	Oct. 1936	Nov. 1936
Taffetas, Twills, Linings and Other Staples	274	276	324
Dress Goods, Novelties, and Other Fancies	111	112	130
Total	167	168	197

•

Rayon key prices and statistics follow:

	Jan. 4 1937	Dec. 1 1936	Jan. 1 1936	Jan. 1 1935
Viscose process				
75 denier (18–30 fils.)	$0.90	$0.90	$0.90	$0.92
100 denier (40 fils.)	.79	.79	.79	.80
150 denier (40 fils.)	.60	.60	.57	.60
Acetate process				
150 denier	.60	.60	.60	.67½
Cupra. process				
150 denier (112 fils.)	.65	.65	.65	.70
Rayon staple 1½, 3 and 5½ denier	.28	.28	Not quoted	Not quoted

Indices of Deliveries, Exclusive of Acetate (Textile Organon)

	Dec.	Nov.	Oct.
For year 1936	557	508	504
For year 1935	000	464	494

•

Silk key prices and statistics follow:

Prices	Jan.4 1937	Dec. 1 1936	Jan. 2 1936	Jan. 2 1935
Crack XX 13/15 white 78%	$1.99½	$2.05	$2.04½	$1.52
Tram, 5thd Japan 85%	2.85	2.90	2.65	2.35
Tram Crack XX 78%	2.61	2.65	2.57	2.10
60s-2, spun silk	3.05	2.95	2.95	2.85

Statistics	Imports	Approx. Deliveries	Stocks at warehouses
Dec. 1936	41,627	45,328	44,414
Nov. 1936	50,814	40,401	40,713
Oct. 1936	43,840	43,093	30,300

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Rayon & Silk

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TEXTILE WORLD'S

Knit Goods Digest

THE Underwear Institute has been busy taking a bow in connection with the excellent industry survey recently completed under the direction of its research director, Francis E. Simmons. The results, as noted in last month's issue, have been made available in a report entitled "Business-Building Facts." Let us hope the industry's approval will also be expressed in individual action—on such matters as the need for more aggressive new-product development, for example. That would be the best compliment the industry could pay the Institute.—*Editor.*

•

Hosiery Hearing Jan. 26—U. S. Tariff Commission, Dec. 23, granted request of National Council of American Importers and Traders, Inc., for postponement of hearing on seamless cotton hosiery imports. Hearing date, originally Jan. 12, was set for Jan. 26, the N.A.H.M. agreeing.

•

Meyer Heads Full-Fashioned Body—Directors of Full-Fashioned Hosiery Association, meeting in Philadelphia Dec. 21, elected the following officers: President—William Meyer, president Apex Hosiery Co.; vice-president—John H. Vogt, president Nolde & Horst Co.; treasurer—F. Elwood Struve, Apex Hosiery Co.; executive secretary—Chas. Lehmuth. J. C. J. Strahan, retiring president, was praised for "his far-sighted leadership" in a unanimously adopted resolution.

•

Gotham Gift Shop Spurs Sales—Selling hosiery in gift containers priced up to $100 proved an effective method of stimulating Christmas volume at the gift shop recently opened by Gotham Silk Hosiery Co., at 500 Fifth ave., New York. Merchandise offered includes miscellaneous gifts for men and women.

•

Nov. Hosiery Sales—Hosiery shipments in November, 1936, were 10,846,335 doz. pr., as against 12,234,846 in the preceding month, and 10,231,026 in November, 1935.

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Keen Interest in Hosiery Problems—If attendance by manufacturers at N.A.H.M. conferences in North Carolina, last month, were any criterion, similar meetings scheduled this month for Georgia, Philadelphia and other hosiery areas should break records. N. C. attendance totaled 95% of those invited. Crucial 1937 problems, especially legislation, were discussed.

•

Underwear Group Elects Rutledge—Meeting in N. Y. Dec. 14, the retail mill group of the U. I. elected George E. Rutledge, president, Munsingwear Corp., as chairman. Need for higher underwear prices to equalize rising costs was the chief discussion topic. Speakers included C. F. Stickler, of Superior, Inc., and B. W. Thayer, Minneapolis Knitting Mills, who analyzed cost problems.

•

Cold to Fall, 1937, Orders—Underwear mills continued active booking of spring, 1937, orders, but few were disposed to accept summer business, and there was a conspicuous aversion to taking fall, 1937, orders. Prices for the most part remained at November, 1936, levels, but protective clauses were in use on most advance orders.

•

Haight Associates to Manage Richmond Spinning—Sherman P. Haight, treasurer, E. Z. Mills and Cartersville (Ga.) Mills, with a group of underwear-hosiery manufacturers, have been given operation and management of Richmond Spinning Co., Chattanooga, Tenn., under reorganization plan that was approved by Richmond Co. stockholders last month.

•

New Elastic Yarn Patent—Robert H. Coleman, Thomasville, N. C, has been awarded a patent on the laying-in of elastic yarn in stockings. The yarn is knitted in at only the point of introduction and removal. Maurice Mills Co., and Ragan Knitting Co., both of Thomasville, have each one-fourth interest in the patent.

•

A Correction—A review of "Business-Building Facts", underwear industry report issued by U. I., in December TEXTILE WORLD, cited Pennsylvania as representing 2.6% in distribution of mills in the industry. This was a typographical error; the correct figure is 21.6%.

•

Outerwear Men Honor Steuer—The Philadelphia K.O.A., Dec. 17, presented its annual award for outstanding service to the industry to Bernard Steuer, of Travelo Corp.

•

1937 Swimsuit Drive Starts—Winter to the contrary notwithstanding, the K.I. drive to promote June 21-26 as "the nation's great swim week" started last month, with the selection of Betty Williams, of New Orleans as "the 1937 Swim for Health Girl." Meanwhile mills reported rapidly increasing interest in 1937 swimsuits; in view of possible cost increases, however, mills were not encouraging advance orders at current prices.

•

Hosiery Union Convenes at Washington—Southern unionization drive, legislative situation, and wage raise demand are outstanding in agenda for A.F.H.W., annual convention which brings 200 delegates of hosiery union locals to Washington, D. C., this month.

•

Record Underwear Year—Knitted underwear output for 1936, exceeding 45,000,000 doz., will set all-time record for the industry, U.I. reports, adding that production was 15% above 1935. Due to expectancy of price advances, wholesalers are buying as far ahead as mills will accept, with the result that, at the year-end, unfilled forward orders were double those of 1935 at that time.

•

Hosiery Prices Jump—Spurred by rapidly rising costs, hosiery manufacturers, especially those making branded lines, have raised prices about 13% since mid-December. Demand continues strong, and mills resist pressure to accept late 1937 business.

•

Underwear Wages Rising—January brought wage advances by several leading underwear mills; some firms raised wages 5%; others did not specify. Movement includes underwear mills in both North and South.

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"Ringless" Trial On—"Ringless" hosiery patent trial opened Jan. 11, in Philadelphia Federal Court after two year wait. First session disclosed that Textile Patents Corp. and Julius Kayser & Co. are seeking new patent to reinforce pending claims.

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Knit Goods

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TEXTILE WORLD'S

Processing Digest

ATTENDANTS at the annual meeting of the American Association of Textile Chemists & Colorists, held in Providence last month, reported that it was "the best convention" the association has ever held. This was due, we believe, not only to the excellent arrangements made for it, but to the noteworthy progress which the finishing industry is making just now. There is current a vitality in this branch of textile processing which cannot fail to be reflected in a gathering of men engaged therein.—*Editor.*

●

Stabilization Commission Proposed—Setting up of a commission to improve conditions in the silk and rayon dress fabrics industry was proposed by Sylvan Gotschal, at a meeting Dec. 9, of the Textile Converters Association. The plan calls for a commission of 15 men—composed of weavers, converters, and dyers—to determine what specific conditions require immediate correction and then to set up and enforce trade rules. The commission is not intended to take the place of existing organizations, but is expected to enable each of these associations to function on a more vital basis in effectuating programs developed by the commission. Licenses would be granted to concerns agreeing to abide by the rules and regulations, and violations of these by any licensee will be met with such action as the law provides. The commission represents the principles of industrial self-government.

•

U.P.D.W. on Broadway—New York offices of United Piece Dye Works were moved the first of the year from 132 Madison Ave., to 1440 Broadway.

•

New Officers—Arthur Weisberg, of Kapo Dyeing & Print Works, was elected president of the Salesmen's Association of the Textile Dyeing & Printing Industry at a meeting held last month in New York. Other officers chosen are M. H. Epstein, of Advance Piece Dye Works, first-president; Edward Shannon, of Modern Central Silk Dyeing Co., second vice-president; Alfred Schroeder, of Associated Dyeing & Printing Co., treasurer; and Samuel Clapper, of Plymouth Dye Works, secretary.

•

Medalist—The Perkin Medal for 1937 was presented to Thomas Midgley, Jr., of the Ethyl Gasoline Corp. at a joint meeting of the American Section of the Society of Chemical Industry and the American Chemical Society, held Jan. 8, at The Chemists' Club, New York.

•

Still No Profits—Data released this month show that a group of 71 silk and rayon dyers and finishers had a net loss of 7% in the last six months of 1935, and 11.53% for the entire year.

•

Quality Standards—Quality standards for finished silk and rayon fabrics will be developed by the recently formed Dyers & Finishers Association of America, and a seal of approval issued for fabrics meeting those standards. The association plans also to establish a research bureau to keep the membership posted on new machinery, chemicals, and processes. Credit information, collection, claims adjustment, statistics, and price reporting are other services to be rendered. Membership is said to include 95% of the silk and rayon dyers in the Paterson, N. J., area.

•

Textile Testing—Testing in relation to chemical processing and use of textiles was discussed by Wm. D. Appel, National Bureau of Standards, before the Toronto Chemical Association, Dec. 7. Problems studied at the Bureau include light fastness of dyes, serviceability of pure-dyed and weighted silks, and crease-resisting property of fabrics. Machines have been developed at the Bureau for testing the performance of carpets and rugs, hosiery, coated fabrics, and window-sash cord. "Performance tests," said Mr. Appel, "will be of the greatest help to users of textiles when they are incorporated in nationally accepted standards for the certification to the user of the serviceability of the textiles he buys."

•

Forward Buying—Forward buying of finished goods extending through the first half of the year is reported by some of the leading converters. Chain stores, mail-order houses, and garment manufacturers are among those taking advantage of the opportunity to purchase second-quarter goods on the basis of present gray-goods contract price.

•

Surrealism and Celanese—Celanese Corp. of America takes cognizance of the newest vogue in art with the issuing of a chart of dress-color combinations selected from paintings by some of the better-known Surrealistic artists. The color chart is to be followed by a series of Surrealist prints on Celanese fabrics.

•

New Indigo Dyeing Process—For applying indigo to denim, Otis Co. has developed a new process, which is said to result in complete impregnation of the yarn, instead of the surface dyeing obtained by usual methods. Equipment for carrying out the process has been installed in the company's Columbian Mill, Greenville, N. H.

•

Price Rise Mooted—Following the recent increase of 1c. per yd. for dyeing weighted silks, dyers in the Paterson, N. J., area are planning to advance prices for finishing certain of the pure-dyed silk fabrics and various synthetics. Increases contemplated range from about 20 to 25%.

●

PRINTED JERSEY of Du Pont rayon. Recent improvements in printing technique have made possible production of clearly defined patterns on this type of fabric.

Processing

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TEXTILE WORLD'S

Engineering Digest

WITH all spindles humming and operating executives constantly away from their desks, hustling from one section of their departments to another to maintain production, a good system of intra-plant communication is becoming more vital. We have just visited a mill in which communication facilities are carried to a high point. Colored lights scattered throughout each department notify the overseer as soon as he is needed in his office or at the inter-department telephone. Loud speakers located throughout the mill are connected to a microphone in the manager's office; and, if necessary, the manager can address all of his hundreds of employees at one time. Blackboards suspended from the ceiling over aisles can be lowered quickly in order that the long-term or reminder type of message can be written on them. Time is money, and an efficient communication system is one way to save it.—*Editor.*

●

Exports of industrial machinery in October were valued at $16,003,332, the highest for any month since June, 1931, and 36% greater than for October, 1935, according to the Department of Commerce. The increase was distributed over most machinery lines, although there were decreases in the amounts of certain types of equipment shipped, notably textile, sewing, and shoe machinery, which was valued at $1,569,452, as compared with $1,629,439 during the 1935 period. Power-generating equipment also showed a decrease in shipments.

●

"We ran before we learned to creep" recently declared J. E. Tobey, manager of the fuel engineering division of Appalachian Coals, Inc., Cincinnati, Ohio, in an address before the Muskegon, Mich., chapter of the National Association of Power Engineers. By this, he meant that "much of our present day burning equipment was designed without the benefit of basic information on coal due to lack of factual data." However, fuel engineering is advancing by leaps and bounds, he said, pointing out that considerable research is going on at a number of technical colleges, and describing it in some detail. Other topics featured in the address were underfeed stokers and "incidental" costs.

●

A summary of activities and a condensed financial report of the Engineering Foundation were presented at the annual meeting of the organization held recently. Some of the projects described were cottonseed processing research, fluid meters, strength of gear teeth, welding research, critical pressure steam boilers, etc.

●

Alloy - Steels—John W. Sands, of the development and research division, addressed the Buffalo Chapter of the American Society for Metals at their meeting Dec. 10 on "The Properties and Selection of Alloy Steels." The discussion centered chiefly on the origin and growth of alloy steels, the reasons for the number of S.A.E. specifications, and the necessity for balancing factors in order to make the proper selection.

●

Illumination Standards—The following recommended standards for lighting of textile mills are reprinted from the "Illumination Design Handbook," published by Westinghouse Lamp Co., Bloomfield, N. J.

	Foot-candles
Cotton—	
Opening and Lapping, Carding, Drawing, Roving, Dyeing	10
Spooling, Spinning, Drawing-in, Warping, Weaving, Quilling, Inspecting, Knitting, Slashing (over beam end)	20
Silk—	
Winding, Throwing, Dyeing	15
Quilling, Warping, Weaving, Finishing—	
Light Goods	15
Dark Goods	30
Woolen—	
Carding, Picking, Washing, Combing	10
Twisting, Dyeing	10
Drawing-in, Warping—	
Light Goods	15
Dark Goods	30
Weaving—	
Light Goods	15
Dark Goods	30
Knitting Machines	20

●

Lubricants and Corrosion—Plans are announced by the American Society for Testing Materials for two symposia—one on lubricants and the other on corrosion testing—to be held during a regional meeting of the society at Palmer House, Chicago, the week of March 1. At the lubricants session Dr. W. A. Cruse, of Mellon Institute, will present a paper on the cause and effect of engine deposits; Dr. G. M. Maverick, of Standard Oil Co. of New Jersey, will discuss addition agents for lubricating oils; and Dr. W. S. James, of Studebaker Corp., will explain how to select a motor oil. The corrosion symposium is intended to inaugurate an A.S.T.M. study of corrosion testing, and papers will be presented by representatives of both the ferrous and non-ferrous metals industries.

●

Power Transmission Council, Inc., Boston, announces that the following officers have been named to serve during the next year: A. P. Homer, president; G. A. Hanson, vice-president and chief engineer; D. W. McAllen, manager of mill supply sales, SKF Industries, Inc., Philadelphia, treasurer; and Miss D. M. Rae, secretary. C. E. Brinley, president of American Pulley Co., was made chairman of the board of directors. Among the objects undertaken by the council for its 1937 program are increased engineering research, testing service for its members, pooling basic knowledge and patents, increased advertising and promotion effort, technical advisory service for users of group drives, and further development of power transmission clubs, of which there are now 50.

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Engineering

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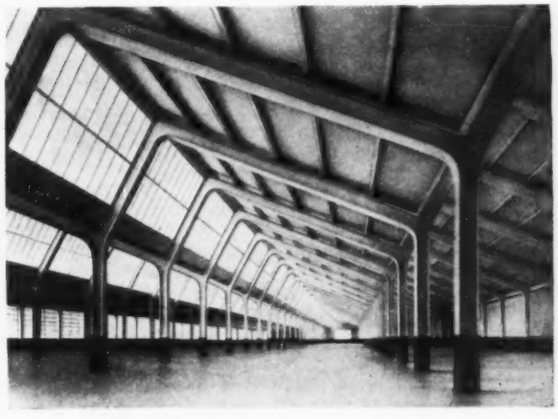

BROADER AISLES, unobstructed headroom to full ceiling height, and a maximum of uniform daylight are provided in single - story industrial buildings of a new type developed by Austin Co., Cleveland, Ohio. Entirely stripped of cross members and trusses, which cast spider-web shadows.

Mill News

Cotton Mill News

Alabama Textile Products Corp., Andalusia, Ala., has had under construction an addition, 30 x 120 ft., three stories, which will house machinery from the J. G. Scherf Mfg. Co., Brantley, Ala., which is being liquidated.

Boaz (Ala.), **Twine Mill** is constructing an addition to permit increase of its spindles from 1,800 to 5,000, C. M. Elrod, manager, has announced.

Goodyear Tire & Rubber Co., Gadsden, Ala., has let general contract to the Austin Co., 16112 Euclid Ave., Cleveland, Ohio, for two-story addition to warehouse No. 3 at local mill, 100 x 100 ft., estimated to cost close to $90,000.

Gainesville, (Ga.), **Cotton Mills** have installed the patented vacuum lint and dust collector of the Textile Shop of Spartanburg, S. C., on the company's automatic spoolers.

Georgia-Kincaid Mills, Griffin, Ga., have awarded general contract to Newton Coal & Lumber Co., Griffin, for two-story addition, 100 x 120 ft., to local No. 2 mill, to be equipped for expansion in weaving division, including modernizing and improving of present mill units; 525 looms will be installed. Work is scheduled for completion next spring and will cost about $200,000. J. E. Sirrine & Co., Greenville, S. C., are engineers.

Callaway Mills, La Grange, Ga., has begun superstructure for new one-story addition, 75 x 132 ft., for which general contract was awarded to Newman Construction Co., La Grange. It will be used for expansion in slasher division at Hillside Plant, and is estimated to cost over $75,000.

Chicopee Mfg. Corp., Chicopee Falls, Mass., has concluded arrangements for purchase of the former No. 4 Mill of Amoskeag Mfg. Co., Manchester, N. H., known as the Coolidge Mill, with adjoining warehouse units, totaling 587,000 sq. ft. floor space in mill proper, and 292,000 sq. ft. warehouse area. New owner will improve and equip at once for new mill, providing facilities for employment of over 700 persons in different divisions. It is proposed to have plant ready for service early in 1937.

Lawtex Corp., Fall River, Mass., manufacturer of washable rugs, tufted bedspreads, etc., has leased main floor of local Laurel Lake Mill, totaling about 23,000 sq. ft. floor space. Equipment will be installed at once.

Royal Curtain Mfg. Co., Roslindale, Mass., has work under way on a second-story addition, 90 x 155 ft.

General Webbings Corp., Springfield, Mass., installed a new rubber-covering machine for yarn the last of December, the second unit of this type installed in 1936. A calender was added recently, and the number of looms was increased during the year from 16 to 40.

S. Slater & Sons, Inc., Webster, Mass., and Slater, S. C., have awarded general contract to Charles W. Angle, Inc., North Carolina Bank Building, Greensboro, N. C., for new mill on South Elm St., Greensboro, one-story, 235 x 419 ft., estimated to cost about $500,000. A number of smaller adjoining units will be built. An air-conditioning system will be installed. Facilities will be provided for employment of about 600 persons for initial operations. Work is scheduled for completion next spring. Company is planning discontinuance of a mill at Webster and will remove considerable equipment from that point to mill at Slater, S. C., operated in name of Slater Mfg. Co.

Waverly Mills, Inc., Laurinburg, N. C., has converted one of its plants to manufacture of shoe laces and braidings. New machinery was installed for this purpose.

Adam McLean Cotton Mills, Lumberton, N. C., formerly National Cotton Mills, is being renovated. The mill, which has 15,000 spindles, was purchased at auction by the new owners for 831,525. H. B. Jennings is president of the new organization.

City Cotton Mill, Newton, N. C., has completed an addition to the plant, in which new looms and spindles have been installed.

Entwistle Cotton Mill No. 3, more generally known as **Old Roberdel**, near Rockingham, N. C., closed for many months, is now being remodeled, and the old 404 narrow looms are being replaced by 275 40-inch looms. The 9,000 spindles will remain as before.

Sanford (N. C.) **Cotton Mills** have work under way on new one-story addition to be equipped for expansion in spinning division. Company will also carry out modernization program in other mill departments, including installation of considerable new equipment. Entire project will cost over $75,000.

Marshall Field & Co. will consolidate the Nantucket Mill at Spray, N. C., with the sheeting mill at Draper, N. C., making a unit of 40,000 spindles and 872 looms. A $200,000 addition at Draper is planned.

Wilkes-Barre (Pa.) **Lace Mfg. Co.** plans improvements to its plant in Courtright Ave., to include construction of an overhead bridge connecting two buildings. The firm has expended upward of $200,000 for improvements during the last two years.

Calhoun Mills, Calhoun Falls, S. C., have asked bids on general contract for alterations and improvements in weave shed, to include installation of additional equipment. J. E. Sirrine & Co., Greenville, S. C., are consulting engineers.

Lydia Cotton Mills, Clinton, S. C., has had the "No Drip" slasher exhaust system installed on their slashers.

Franklin Process Spinning Mill, Inc., Fingerville, S. C., has completed a modernization program. Long-draft spinning and other equipment has been installed.

Dunean Mills, Greenville, S. C., within recent months installed a Curtis & Marble shearing machine. **Woodside Cotton Mills Co.**, Greenville, is installing several Curtis & Marble shearing machines.

Industrial Cotton Mills, Rock Hill, S. C., have superstructure under way for new one-story addition for cloth division, for which general contract recently was let to the Daniels Construction Co., Anderson, S. C. It will cost about $75,000.

Dyersburg (Tenn.) **Cotton Products, Inc.**, has installed approximately $65,000 worth of new equipment, including facilities for long-draft spinning and stock dyeing.

Elk Cotton Mills, Fayetteville, Tenn., is undergoing an extensive modernization program, including installation of considerable Saco-Lowell preparatory equipment.

Cherokee Spinning Co., Knoxville, Tenn., has been granted a $10,000 building permit to add a story to its plant.

Crompton-Shenandoah Co., Inc., Waynesboro, Va., announces plans for a new unit to cost $35,000.

Dominion Textile Co., Ltd., Magog, Que., has awarded general contract to Anglin-Norcross Co., Ltd., 892 Sherbrooke St., West, Montreal, Que., for new one-story mill addition. Superstructure will begin at once. Cost about $65,000.

Canadian Spool Cotton Co., Montreal, Que., has work under way on new one-story addition, for which general contract recently was let to the Sutherland Construction Co., 1440 St. Catherine St., West. It will be used for expansion in warehouse and is reported to cost over $40,000. McDougal & Friedlman, 1221 Osbourne Ave., Montreal, are engineers.

Cotton Financial Notes

Sunset Textile Mills, Selma, Ala., controlled by **California Cotton Mills**, have been sold to J. F. Ames of Selma for a reported price of $50,000.

Socapatoy, Ala., is the site where northern cotton mill operators are said to have purchased a 100-acre site for mill and village. It is six miles south of Goodyear.

Cloverdale Cotton Mills, Montgomery, Ala., have been bought by J. F. Ames of Selma (Ala.) Mfg. Co.

James Caruso, Middletown, Conn., manufacturer of suspender web, has purchased the factory on Evergreen Avenue formerly occupied by C. L. Wetherbee & Son, for the manufacture of bias tape. Mr. Caruso was formerly employed by the Russell Mfg. Co.

Morgan Cotton Mills, Quitman, Ga., has started up after 18 months' idleness.

Nashua (N. H.) **Mfg. Co.** reports net profit for year ended Oct. 31, 1936, of $256,657, against a loss of $1,327,591 for preceding fiscal year.

Pepperell Mfg. Co., Biddeford, Me., has settled its tax controversy with the town of Biddeford. Taxes for the next four years are fixed at $80,000 each.

Otis Co., Ware, Mass., manufacturers of denim, awnings, cotton goods and duck, has sold its Palmer Mills property in Palmer and its Boston Duck property in Bondsville, according to deed filed in the registry of deeds. The Palmer Mills were sold to a new corporation called the Palmer Mills, Inc., for a price indicated by revenue stamps to be $120,000. The Boston Duck property in Bondsville was sold to the Boston Duck Co. for an indicated price of $280,000.

Aponaug Mfg. Co., West Point, Miss., idle since 1934, has resumed operations.

American Cotton Mills, Bessemer City, N. C., has transferred all assets to Algondon Mfg. Co., in a reorganization under 77-B.

Gaston Mfg. Co., Cherryville, N. C., idle for two years, has been leased by W. J. Woods, and put into operation. It is capitalized at $250,000.

French Broad Cotton Mills, Elk Mountain, N. C., near Asheville, will reopen for operation after five years of idleness.

Caswell Cotton Mills, Kinston, N. C., will be taken over by the bondholders under orders being handed down by Federal Judge I. M. Meekin at New Bern, N. C.

Cleveland Cloth Mills, Shelby, N. C., is now controlled exclusively by former Gov. O. Max Gardner, who recently purchased the half interest belonging to his partner, O. M. Mull.

Carolina Cotton & Woolen Mills, Spray, N. C., are now known as **Marshall Field & Co.**, Manufacturing Division.

Ellyn Yarn Mills, Stubbs, N. C., has been leased by M. M. Rudisill, and began operations several weeks ago with 50 operatives. The firm is now known as the Murler Mills Co.

Pageland (S. C.) **Mills**, known as Chesterfield Yarn Mills, idle for several years, have been acquired by new interests and will be remodeled.

Saxon Mills and **Chesnee Mills**, Spartanburg, S. C., will be merged, according to a recent announcement by John A. Law, president of both companies.

Nyanza Mills (Woonsocket, R. I.), directors have declared the first dividend in liquidation of $4 a share payable to stockholders of record Nov. 5. Stockholders authorized liquidation in February, 1935.

Firestone Cotton Mills of Canada, Ltd., is the name of the subsidiary of the Firestone Tire & Rubber Co. of Akron, Ohio, which has been established in the idle plant of the Oxford Knitting Co., at Woodstock, Ont. The plant will make tire fabric.

Wool Mill News

Rochdale Mill, at Oxford, Mass., has been sold by the Krintzman Dusting Mills, Inc., to Bernard L. Porter of Franklin. After extensive changes and repairs, Mr. Porter will move a carpet manufacturing business there from Franklin, Mass.

L. W. Packard & Co. is to add four new automatic looms to equipment at its plant in Ashland, N. H.

Stevens Woolen Mills, Franklin, N. H., plan improvement in equipment to meet competition in their lines.

Gonic (N. H.) **Mfg. Co.** is installing a new Babcock and Wilcox boiler, and plans to put in 24 more automatic looms at an early date. An automatic dresser and Universal winders will be moved to another floor.

Goodimate Co., Philadelphia, manufacturers of men's clothing, has acquired 35,000 sq. ft.

of space in No. 6 and 7 mills of the former Amoskeag Mfg. Co., Manchester, N. H. This is the first firm to take over a part of the worsted division. Operations will be started as soon as the mills can be made ready, and 150 to 200 will be employed at first. The Goodimate firm will use its new addition on French-spun yarn for use in men's wear.

Elm Mills, Tilton, N. H., have announced a program of improvement in equipment.

Karastan Rug Mill of the Carolina Cotton & Woolen Mills, Leaksville, N. C., is installing an 18-ft. carpet shearing machine made by the Curtis & Marble Machine Co.

Philip L. Sheerr & Sons, interlinings, Philadelphia, Pa., have leased portion of Mill No. 9 of former Amoskeag Mfg. Co., Manchester, N. H., and will occupy at once for new plant. An option has been taken to purchase the entire No. 9 mill unit. Facilities will be provided for initial employment of about 200 persons, to be increased at later date. It is proposed to organize a new company to operate the plant, headed by Robert, Maurice, Alvin and Stanley Sheerr.

Blueridge Co., Glasgow, Va., has let general contract to John P. Pettyjohn Co., 212 Eighth St., Lynchburg, Va., for new additions to mill to double present carpet capacity. Cost over $250,000 with equipment. Work will be placed under way soon and is scheduled for completion next May. Ballinger Co., 105 South Twelfth St., Philadelphia, Pa., is architect and engineer. Facilities will be provided for employment of close to 400 additional workers.

Sultana Woolen Mills Syndicate, Calgary, Alta., recently organized, has awarded general contract to the Frederick Jones Co., 1907 Bowness St., Calgary, for one-story mill at Silver Springs, B. C., 112 x 184 ft., estimated to cost close to $100,000, with machinery.

Brock Woolen Co., Simcoe, Ont., plans extensions and improvements in mill, including installation of additional equipment for increased capacity. Work will be carried out early in 1937. Cost estimated close to $85,000.

Wool Financial Notes

Angus Park Mfg. Co., Sprague, Conn., **Airlie Mills, Inc.,** Norwich, and **Assawaga Co., Inc.,** Danielson, will be merged if approved by stockholders, and will be known as the Angus Park Woolen Co., Inc. Plans have been under way for some time. The three companies applied for reorganization under Section 77B of the Federal bankruptcy laws.

Somersworth Woolen Co., Berwick, Me., closed since 1927 except for a brief revival, has been bought by a corporation headed by J. Levi Meader of Gonic, N. H., and is being put in condition for the manufacture of men's and boys' suitings. About 60 persons will be employed on a single shift. The treasurer of the new corporation is L. F. Hug.

Windham (Me.) **Mfg. Co.** sale to the Town of Windham last March has been invalidated by the Maine Supreme Court.

Caryville (Mass.) **Mill** is the name of the former Taft Woolen Co. A. E. Donald is superintendent.

Springfield Blanket Co., Inc., Holyoke, Mass., has been sold at public auction to A. H. Barashnik, head of the Acme Quilting Co., Brooklyn, N. Y., for $1,000 and accrued charges of $7,382. Plans are being made to move the Brooklyn concern to Holyoke. The concern makes pads for dining tables.

Wallace Woolen Mills, Detroit, Mich., with H. B. Lawton, president, is the reorganized Hugh Wallace Co. operating a woolen mill on overcoatings, ski coats, etc.

Atlantic Mills, Providence, R. I., will hereafter operate as Atlantic Division of A. D. Juilliard & Co., New York.

S. & L. Combing Co., Providence, R. I., has been placed in hands of H. A. Jarret as temporary receiver.

Midwest Woolen Mills, Inc., Sheboygan Falls, Wis., have been organized to operate a local mill. New company is represented by Carl B. Rix and G. C. Kuelthau, 324 East Wisconsin Ave., Milwaukee, Wis.

Guelph Carpet & Worsted Spinning Mills, Ltd., Guelph, Ont., reports net profit of $177,592 for the year ended Sept. 30, compared with $153,822 in the previous fiscal year.

Mill News

Rayon & Silk Mill News

Atmore (Ala.) **Silk Mill,** recently acquired by H. C. Rausch and associates plans new one-story addition. New throwing equipment and other machinery will be installed. Cost close to $50,000.

Chelsea Silk Co., Mystic, Conn., recently purchased machinery from the Bloom plant at New London and is installing same.

Delaware Rayon Co., New Castle, Del., has erected a building to house additional tanks and is revamping existing buildings at a cost of $35,000.

E. I. du Pont de Nemours & Co., Wilmington, Del., Rayon Division, has authorized construction of addition to mill at Ampthill, near Richmond. Va.

Allensville, Ky.—A textile plant to manufacture woven hat bands and clothing labels will start six looms here about Jan. 1. Wm. F. Pritz, formerly of Paterson, N. J., has shipped the machinery here. It was being installed in December in a brick structure formerly occupied by J. L. Orr & Sons.

Pierce-Powers Mill Co. has leased a section of Water Street mill in Clinton, Mass. and installed the first battery of 12 looms and warp beamer.

Carl Stohn, Inc., is concentrating operations at the plant in Taunton, Mass., moving other portions of its Hyde-Park plant.

New Process Rayon, Inc., Gloucester City, N. J., plans expansion and improvements in mill, with installation of additional equipment to triple present capacity of 900,000 lbs. per annum. Program will be carried out during 1937.

Burlington (N. C.) **Mills Co.,** has opened bids for construction of a $35,000 addition to weave draperies at Anthony and Log Streets.

American Enka Corp., Enka, N. C., is spending more than $1,000,000 on replacements in equipment and new construction.

Cleveland (Tenn.) **Silk Mills, Inc.,** lately chartered with capital of $100,000, has leased local building at Waterhouse and Thirty-eighth St., and will remodel and equip at once for new throwing mill. New company is headed by C. W. Harle and E. E. Pickard, both of Cleveland.

Rayon & Silk Financial Notes

Sidney Blumenthal Co., Shelton, Conn., reports net income for September quarter of $318,143 amounting to $1.26 a share, compared to 6c a share for the corresponding quarter of 1935.

Plainfield (Conn.) **Mfg. Co.,** has been formed with capital of $50,000 to operate a local cotton and rayon fabric mill. Incorporators of new company include Richard L. Darrant and Leon P. Lewis, 16 Franklin St., Norwich, Conn.

Williamsport (Md.) **Textile Corp.,** has been organized to operate a local silk and rayon throwing mill. Incorporators of new company include Joseph D. Mish and William P. Lane, Jr., both of Williamsport.

National Weaving Co., Lowell, N. C., is scheduled to begin operations at an early date, according to an announcement by Robert Jackson, superintendent. This mill manufactures rayon fabrics, and was recently reorganized under Section 77B of the National Bankruptcy Act. New capital stock amounting to $250,000 has been subscribed by I. Rogosin and associates, of New York.

B. Edmund David Silk Mills at Selingsgrove and Beavertown, Pa., have been sold to David Speizman, Inc., Ashley, Pa. The former is equipped with 100 box looms and the latter with 120 box looms, with full auxiliary equipment in both. It is expected that these properties and equipment will be offered for resale in the near future by the purchasers who are dealers in textile mill machinery and equipment.

Frank Silk Mills, Murfreesboro, Tenn., has been sold to Welwood-Norwick Ribbon Factories for $40,000.

Knitting Mill News

Richard Paul, Inc., 860 South Los Angeles St., Los Angeles, Calif., specializing in production of shoe-high hosiery ("Peds"), has acquired a building at 33 Race St., Wilmington, Del., and will occupy for main plant, removing Los Angeles mill to this location.

Seaford (Del.) **Hosiery Mills, Inc.,** recently organized, have acquired property at West Seaford, as site for new one-story mill, 80 x 100 ft., for which superstructure will begin at early date. Cost estimated close to $45,000; will employ 75.

Spotlight Hosiery Mill, Inc., Richmond Woolstein, president; Norman Burns, vice-president; Dewey Woolstein, secretary-treasurer, began operations of a new circular hosiery plant at Rome, Ga., about Jan. 1, with capacity of 15,000 dozen pair a month.

General Hosiery Co., Inc., Fort Wayne, Ind., has authorized the installation of additional equipment for increased capacity, and will begin program early in February. Four new fine-gauge knitting machines and auxiliary equipment will be installed. Entire expansion will cost close to $50,000.

Groff-Bragg Textile Corp., Adrian, Mich., which recently removed its hosiery mill from Toledo Factories Building, Toledo, Ohio, to building at Adrian, has arranged for increased capacity.

Mitchell Knitting Mills, Inc., Winona, Minn., have awarded general contract to George J. Nelton, 836 West Broadway, Winona, for completely modernizing the plant.

Sulloway Mills, Franklin, N. H., are adding new full-fashioned hosiery machinery to their equipment.

Van Raalte Co., Inc., Dunkirk, N. Y., plans construction of a brick-and-steel addition to its main plant in that city, to provide working space for approximately 200 additional employes. Plans provide for a new unit, 65 x 150 ft.

Boiling Springs (N. C.) **Hosiery Mill** has installed some additional machines, which were purchased from a mill at Rutherfordton, N. C.

Glen Raven (N. C.) **Hosiery Mills** recently completed the installation of the last of 8 Einsiedel-Reiner full-fashioned hosiery machines, purchased from Robert Reiner, Inc. Glen Raven has ordered two more leggers from the Reiner Company.

Robbins Knitting Co., which is being moved from High Point, N. C. to Spruce Pine, N. C., is expected to begin operation in the new 80 x 200 ft. plant early in January.

James J. Griffith, secretary and treasurer, Vance Knitting Co., Kernersville, N. C., has acquired mill property of Knit Rite Hosiery Mills, Princeton, W. Va., and will take over at once. Mill will have additional equipment installed to develop a capacity of 1000 doz. pairs of men's hose daily.

McPar Hosiery Co., Marion, N. C., is constructing a 26 x 54 ft. addition for storage and packing space.

Robbins Knitting Co., recently moved from High Point, to Spruce Pines, N. C., began operations manufacturing hosiery, Jan. 4, with a staff of 150 workers. Officials stated that as soon as the plant is operating at capacity, it will employ 300 persons.

Camilla Hosiery Co., Hawley, Pa., headed by William Scheller, Philadelphia, will begin operations in Hawley Feb. 1. About 50 workers will be employed.

Dixie Hosiery Mills, Mount Gilead, N. C., plans an addition, but details of the expansion program have not been announced.

Alamac Hosiery Mill, Reidsville, N. C., is establishing a full-fashioned hosiery mill in the William Carter building. Equipment valued at $75,000 is being installed and the plant is scheduled to get into operation by February. The incorporators are J. E. McGovern, formerly

ADVERTISING PAGES REMOVED

Mill News

an executive of a silk hosiery mill at Hackettstown, N. J.; Albert Donst, also of Hackettstown, and Rudolph Kraus of Reidsville, subscribing $32,000 of the $50,000 authorized capital.

P. H. Hanes Knitting Co., Winston-Salem, N. C., announces that additions will be made to Mills Nos. 3 and 4. Construction, machinery and equipment will entail an expenditure of approximately $150,000. The additions will increase the output of each mill by about 35%. Contract for the first unit, which will be of brick and steel, one-story, 45 x 160 ft., has been let to Frank L. Blum Co. of Winston-Salem, and work will be started immediately. Plans for the second unit are being developed and construction is expected to begin in the spring.

Floyd Singer who was superintendent of the Century-Beverly Corp., Boyertown, Pa., for 14 years until it closed recently, has purchased a three-story factory building at Eashbach, Pa., four miles North of Boyertown, for use as an underwear mill. Equipment will comprise 56 machines.

Brownhill & Kramer, Inc., Philadelphia, Pa., have leased a building at Couderport, Pa., and will improve and equip for new branch mill. Certain equipment will be removed from Philadelphia mill to new location and additional machinery acquired.

Thomas W. Buck Hosiery Co., Philadelphia, Pa., has conveyed its plant at Jasper and York Sts., consisting of a four-story structure, two three-story mill units and one-story building, to H. A. Greene, Philadelphia, for an indicated consideration of $42,500.

Oscar Nebel Co., Philadelphia, is constructing a modern hosiery mill at Staunton, Va. The building will be of fireproof construction, 110 x 150 ft. and will contain no windows. However, there will be a 10 ft. strip of glass blocks around the entire building to admit light. Plans call for complete air conditioning and heating by gas, so that a temperature of 70 degrees will be maintained at all times. Twenty new Reading machines for manufacturing the upper part of hose will be installed. The building is expected to cost approximately $40,000, and the machinery is valued at $100,000, not including installation charges.

Rodgers Hosiery Co., Philadelphia, Pa., is establishing a mill at Laurens, S. C. Forty machines, costing about $11,000 each, have been shipped to Laurens and are being installed.

Jac. Feinberg Hosiery Mill, Inc., Rock Hill, S. C., has contracted with the Textile Machine Works, Reading, Pa., for a battery of high-speed 45-gauge full-fashioned knitting machines, to be equipped with jacquard lace 3-carrier attachments.

Roseglen Knitting Mills, Inc., Sumter, S. C., has installed 40 of the latest models of automatic Scott & Williams spiral knitting machines.

Bryan Hosiery Mills, Chattanooga, Tenn., recently purchased over $11,000 worth of new machinery from Robert Reiner Co. of New Jersey.

Fisher-Beck Hosiery Mill, Inc., Kingsport, Tenn., expects to begin operation of the dyeing and finishing plant established at Cranberry, N. C. early in January with daily capacity of 1,000 pairs of hose. P. Ollard, of Kingsport, vice-president, will be in temporary charge.

Standard Knitting Mills, Inc., Knoxville, Tenn., has secured a building permit to add a fourth story, to cost $11,000, to its No. 1 plant.

Hamblen Hosiery Mill, Morristown, Tenn., which recently began operations, is adding a 15 ft. addition for a dyeing and boarding department.

May Hosiery Mills, Nashville, Tenn., has purchased the entire equipment of Amsterdam (N. Y.) Hosiery Mills, manufacturers of boys' sport hose. Approximately 150 machines will be moved to Nashville, which will bring the May production from 1500 doz. to 8000 doz. per day.

Virginia Maid Hosiery Mill, Pulaski, Va., has erected two additions. One building is 40 x 100 ft. for finishing, and the other is for an office, 30 x 60 ft. Latter is also used for the office of the Wallner Silk Hosiery Mill and supply department for full-fashioned machines.

Zwicker Knitting Mills, Appleton, Wis., have asked bids on general contract for three-story addition, 96x100 ft., to cost over $60,000, with equipment. Orbison & Orbison, 216 East Washington St., Appleton, are engineers.

Eaton Knitting Co., Ltd., Hamilton, Ont., is erecting an addition to its main plant, 50x80 ft., steel, concrete and brick construction, to be ready early in 1937. New boilers are also being installed.

National Hosiery Mills, Ltd., Hamilton, Ont., has erected a branch mill at Richmond, Que., now in operation. The new mill is 162x62 ft., and will manufacture various classes of knit goods including full-fashioned hosiery.

Knitting Financial Notes

Glastonbury (Conn.) **Knitting Mills**, sold machinery and stock at auction during the week of Dec. 14. About 200 buyers attended, and sales aggregated $100,000.

Munsingwear, Inc., Minneapolis, Minn., has filed notice of dissolution of its subsidiary, Munsingwear Corp., and assets have been taken over by first noted parent organization.

Leonar Knitting Mills, Inc., New York, N. Y., have been formed with capital of $10,000, to operate a local knitting mill. New company is represented by Samuel Mandell, 152 West Forty-second St., New York, attorney.

Buffalo, (N. C.), **Mill**, idle for some time, has been leased by M. M. Rudisill and has been put into operation. Mr. Rudisill is a cotton mill executive of Lincolnton, N. C.

Sellers Hosiery Mills, Inc., Burlington, N. C., have been chartered with capital of 2500 shares of stock, to take over and operate company of same name, with mill at Tucker and Morehead Sts. Incorporators include D. E., W. W. and C. V. Sellers, Burlington.

Durham (N. C.) **Hosiery Mills, Inc.**, for the nine months ended Sept. 30, 1936, reports a net profit of $25,838. This compares with a loss of $82,782 in the same period of 1935.

Gastonia (N. C.) **Hosiery Mills, Inc.**, organized Nov. 1 by T. A. Henry, Tom C. Henry, J. E. McNair, and A. J. Williamson, has started production of men's hosiery, with Mr. Williamson in charge of manufacturing.

Glenn Hosiery Co., High Point, N. C., has been organized with capital of $100,000, to operate a knitting mill. New company is headed by Charles L. Amos, Sr., owner of local Melrose Hosiery Mills, and A. G. Smith, High Point.

Melrose Hosiery Mills, Inc., were chartered at High Point, N. C., to manufacture all kinds of textile fabrics on Dec. 6, under $300,000 authorized capital. The incorporators were C. L. Amos, Sr., C. L. Amos, Jr., and W. E. Mitchell, all of High Point, N. C.

Stanfield (N. C.) **Hosiery Mills** have been reorganized, following purchase of controlling interest by Arnold and Paul Tucker, Stanfield. Mill will continue in production of women's seamless hose, with increased production. Arnold Tucker is president of company; Paul Tucker, vice-president; and W. P. Harvelle, secretary, treasurer and general manager.

Rhode Island Knitting Mills, Inc., Pawtucket, R. I., are arranging plans for a reorganization under Section 77-B, Federal Bankruptcy Act, in accordance with authority from Federal Court.

Richmond Spinning Co., Chattanooga, Tenn., on Dec. 11 approved reorganization plan, which is to place operation and management under new organization, but likely no change in name. Stockholders accepted proposition from Sherman P. Haight, of New York and associates to take over operation of the company, including spinning mill and Chickamauga Knitting Mill, subsidiary.

Interwoven Mills, Inc., Martinsburg, W. Va., has been absorbed as a corporation by its parent company and will henceforth be known as **Interwoven Stocking Co.**

Processing Plant News

American Dyeing Corp., Rockville, Conn., has been formed by William Horowitz and associates to dye rayon and silk for the converting trade in the former Belding Silk Co. mill at Rockville, recently leased from Somerville Mfg. Co.

Palisade Piece Dye Works, Inc., North Bergen, N. J., have acquired a mill at Richmond, Va., previously occupied by **Ashley Cotton Mills**, and will remodel for branch dyeing and finishing mill. New unit will cost close to $40,000, including equipment.

Carolina Cotton & Woolen Mills, Inc., Spray, N. C., are planning three-story addition to local bleachery, known as Spray Bleachery, estimated to cost about $150,000, including equipment.

Holdsworth Co., Ltd., Montreal, Que., has purchased tract of about one acre of land at 349 Carlaw Ave., Toronto, Ont., for proposed new dyeing and finishing mill.

Processing Financial Notes

San-Dan Bleaching Co., Norwich, Conn., has been formed by Samuel Hollingsworth and Daniel Scavitta to operate a bleaching mill on old Canterbury Turnpike, where farm property has been leased for a mill site.

Bordeaux Textile Printing Co., Inc., Newark, N. J., recently organized with capital of 200 shares of stock, no par value, plans operation of local textile dye and print works. New company is represented by J. George Moss, 1172 Raymond Blvd., Newark, attorney.

Newark (N. J.) **Textile Dyeing & Finishing Co.**, recently organized with capital of 2000 shares of stock, no par value, plans operation of a local dyeing and finishing mill. New company is represented by S. L. Kesselman, 1172 Raymond Blvd., Newark, attorney.

Passaic (N. J.) **Print Works** is being liquidated by Consolidated Products Co. R. L. Gilman is the representative of the latter company located at the print works, 100 Fifth St., Passaic.

Textile Printing Co., Greenville, S. C., recently organized with capital of $10,000, plans operation of local print and dye mill. P. R. Tucker is president of new company, and J. J. Gresham, vice-president and secretary.

Engineering Mill News

Dwight Mfg. Co., Alabama City, Ala., has purchased a number of unit heaters in connection with its recent modernization program.

Columbus (Ga.) **Mfg. Co.** is installing air-conditioning equipment.

American Enka Corp., Enka, N. C., has low bid from Daniel Construction Co., Anderson, S. C., for addition to power house.

Melrose Hosiery Mills, High Point, N. C., have constructed a machine shop at the mill on English Street, costing $1,200.

Cannon Mills Co., Kannapolis, N. C., has constructed a new filter plant which was put into operation early in January, 1937. The plant has a 1,000,000 gallon capacity, and is capable of turning out 2,000,000 gallons of filtered drinking water daily.

Alva Twine Mills, Stanley, N. C., have improved and revamped their power plant, which consists of a water-wheel and Diesel power combined.

Chatham Mfg. Co., Winston-Salem, N. C., has awarded contract for a new fireproof office building to be constructed at a cost of approximately $30,000.

Gossett Mills, Anderson, S. C., is enlarging its executive offices at a cost of approximately $14,000.

Norris Cotton Mills, Co., Cateechee, S. C., has electrified its weaving department under supervision of J. E. Sirrine Co. Its water power has been converted to electrical generation.

Graniteville (S. C.) **Mfg. Co.** recently bought 50 loom motors with starting switches.

Springs Cotton Mills, Lancaster, S. C., is installing a Westinghouse condensing-type turbine generator at a cost of approximately $180,000.

Ware Shoals (S. C.) **Mfg. Co.** recently purchased Westinghouse metering equipment including 24-line starters for motors.